

# American Aviation

*The Independent Voice of American Aeronautics*

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SERIAL RECORD

## Give It A Chance

ONCE AGAIN the issue of monopoly for America's international air service is demanding the time of busy industry and government leaders.

A Congressional committee has begun hearings on a bill which suddenly appeared in the legislative hopper under curious authorship a month or so ago. Much of the hearing will be repetitious. The same battle was fought out and lost by the monopolists early last year.

The new bill would consolidate all international air services into one company, with one management, and steamships and railroads

would be permitted to buy inconsequential minority holdings under guise of presenting a "unified front" of American transportation interests.

Two years ago it was the "chosen instrument." Last year it was the "community company." This year one hears about a "consolidated company." But by whatever name this vast corporate octopus would be known, it is in fact—and in intent—a monopoly. The major difference in the 1947 version is that the proposal would cost the taxpayer more money in seven different kinds of subsidies.

In this issue of AMERICAN AVIATION, the reader will find an article by Senator Pat McCarran, author of one of the chosen instrument bills. Although others in Congress have attempted to take the spotlight from Senator McCarran, the fact remains that he is the original sponsor of the legislation and its most coherent spokesman. Although AMERICAN AVIATION remains staunchly opposed to the creation of a government-subsidized monopoly, it is pleased, as always, to turn over its news columns to all sides of controversial issues. We don't agree with Senator McCarran, but we respect his views and advise our readers to read his side of the argument.

To our way of thinking, there is one reason above all why this 1947 rash of monopoly bills is time-wasting and detrimental to the progress of U. S. aviation. The reason is simply to give our current policy a chance to prove itself right or wrong. The government established the present policy of putting a half dozen or so airlines into the foreign field at the end of the war and this decision had the approval of every government agency and the majority of industry. As of today, only a part of this

(Turn to page 6)



## Nine Years and Many Records

Just nine years ago on May 1, 1938, Eddie V. Rickenbacker and his new financial associates took over ownership and control of Eastern Air Lines. In addition to achieving the lowest operating cost per mile in the industry, Captain Eddie rang up the highest profit record for 1946.

## In This Issue

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**Safety Director Weighs Land-  
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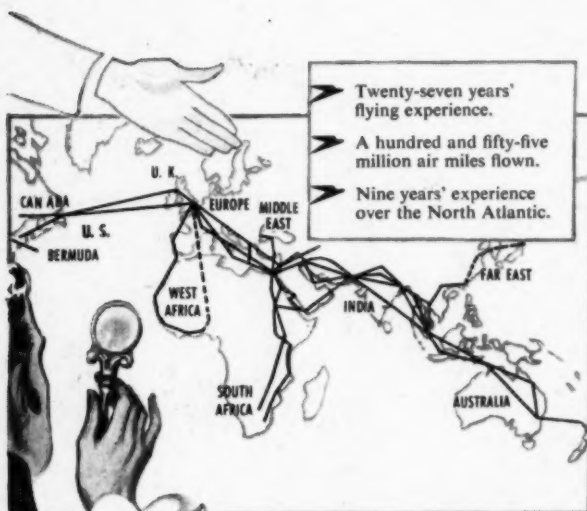


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complaining that all the passengers  
get the best service"



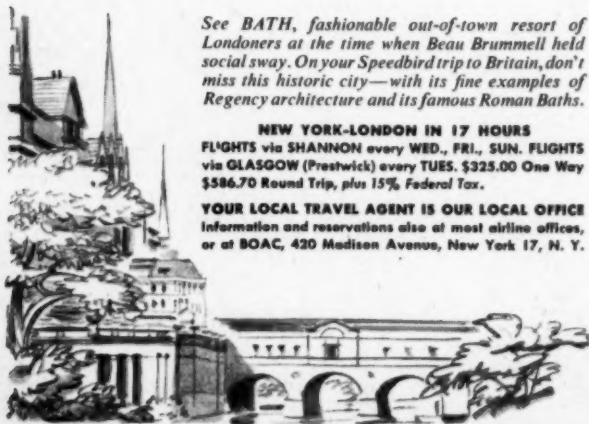
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# American Aviation

Volume 10 Number 23

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May 1, 1947



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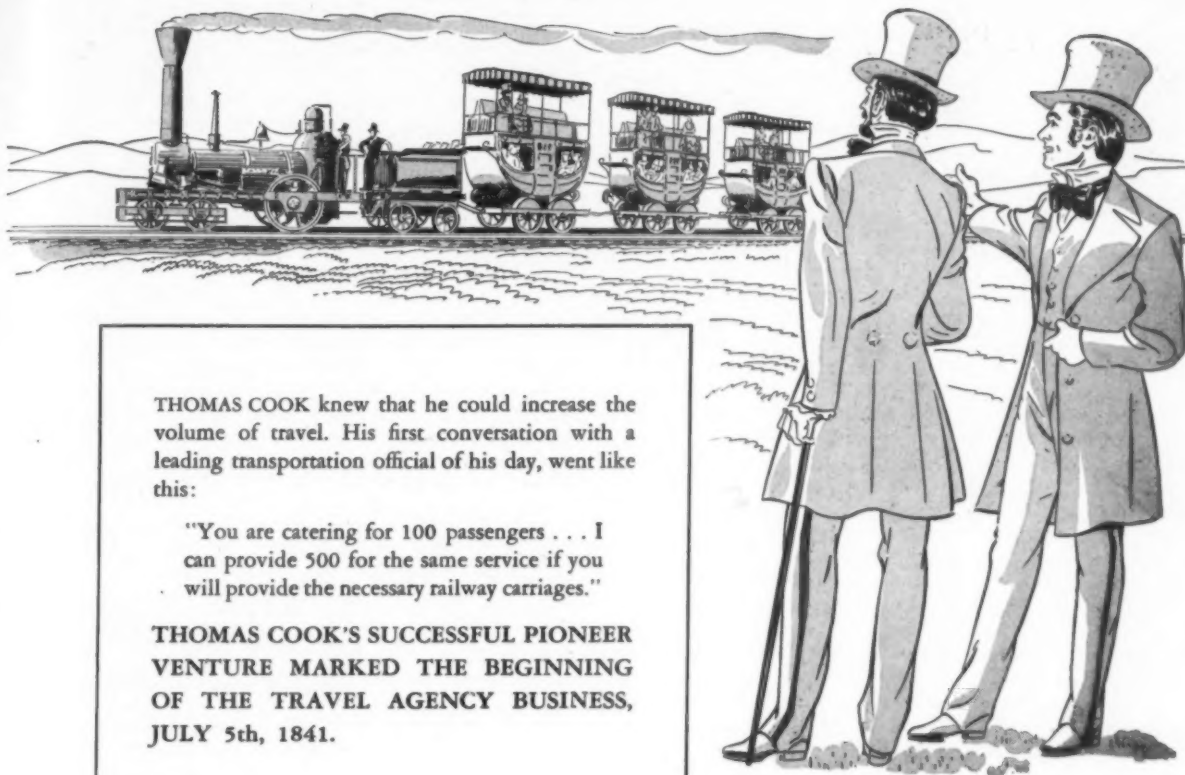
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**COOK'S TRAVELERS' CHEQUES—INTERNATIONAL CURRENCY**

# Editorial

(Continued from Page 1)

structures have admitted weaknesses, but today's endeavor should be toward correcting weaknesses and giving the over-all policy a chance to work. To keep the whole issue embroiled in nonsensical arguments and sabotage is not building U. S. aviation constructively.

It seems to us that enough hot air has gone into the promotion and pushing of the monopoly issue to power the world's largest fleet of airplanes. Add to this motivating power the time of airline executives devoted either to fighting or promoting monopoly and there is enough wasted executive manpower to direct a half-dozen global airlines.

Those who favor monopoly have a pet expression, "in unity there is strength," meaning, of course, that America must unite to protect itself against some strange and awful force called foreign competition. But the monopolists should remember that "in monopoly there is weakness" and that mere vast size does not automatically make for efficiency. As we understand the term, "in unity there is strength," this means that many units should have a common program for the common good. It does not mean one, i. e., monopoly. To have unity you have to have an aggregation, and if all U. S. international airlines work together toward a common goal, then we have strength through unity.

We are glad that Senator McCarran speaks of a "united front," because that is what we have today assuming that all of our carriers are working toward the development of air transport in America's interest. But a monopoly is not a "united front," it is just a front, because no matter how you figure it out on paper or in practice there would be but one set of brains endeavoring to develop world-wide aviation under the American flag. The airplane has shrunk the world considerably, but this earth is still quite a lot of real estate surrounded by some sizeable ponds of salt water.

What disturbs us especially about the 1947 rash of bills is the subsidy involved. It is quite amazing that some Republicans have pinned their names to a proposal calling for increased expenditures at a time when the national government is trying to economize and at a time when everyone is trying to get aviation out of the subsidy category. The legislators involved might be excused on the ground that they have not read or studied the bills which they have technically authored and it wouldn't be the first time a Congressman found himself in such an embarrassing position.

Another disturbing feature is the general approach to the world which these bills propose. Just at a time when the United States is trying to promote international trade on a free, competitive basis and to keep governmental intervention at a minimum, here we find bills proposing to create a government sponsored and financed monopoly designed to wage economic warfare against the airlines of other countries.

Surely everyone in the U. S. wants our country to play a leading role in world aviation. But since when is it the American policy to attempt to dominate ruthlessly the airways of the world? If the U. S. is setting out to run out of business all other airlines, then we have reached a sad stage of development. This proposal to subsidize our way to domination doesn't make sense and doesn't harmonize with U. S. policy in general.

There is a lot of loose talk about the dangers of foreign competition. Certainly there is going to be com-

petition, and why not? But the 1946 record of trans-Atlantic traffic showing that the three American companies carried 83% of all passengers is certainly indicative of something besides foreign competition. What would the U. S. percentage have been with just one company?

Granting that this 83% is abnormal and that succeeding years show a lesser ratio, the quickest way to turn over 75% of the air traffic to foreign companies is to have just one American company in the field.

Much is being said about lower labor costs but the monopolists are inclined to overlook the fact that labor costs are going to be the same whether we have one company or ten. But the evidence is accumulating that air transport is not similar to steamships. Whether U. S. or foreign, an airline must utilize skilled labor, and skilled labor is never cheap despite moderate differentials here and there. Some of the foreign lines have recently been trimming their overhead. Foreign governments are neither inclined nor do they have the means to subsidize heavily their airlines.

The facts are that the U. S. builds the least expensive and most efficient airplanes, and that the U. S. has the greatest know-how in operating them least expensively. It is our heritage in the air—a heritage which we would throw out the window under a subsidized monopoly scheme.

International air transport is important to the United States. It is still in its infancy. It has an unlimited future. The present multiple-company policy may prove wrong after a thorough test. But we firmly believe that U. S. aviation would suffer greatly if we expected one management, now, to undertake the planning and direction of a single company to operate all of the U. S. international routes. If all of America's international aviation is to be limited to the vision and abilities of one company, then we have indeed blocked the progressive benefits of the airplane at an untimely point.

## Lessen the Noise

THERE IS NO denying the resistance built up over the country toward the development of small airports and airparks adjacent to residential areas. Like it or not, the fact remains that an airport these days is classified in the minds of much of the public as an outright nuisance.

If personal flying is to increase in any volume, small landing fields must be easily accessible to population areas. And for the bulk of personal flying requirements, this means accessible to residential sections.

Noise appears to be the chief objection. It seems quite clear that if airplane engine and propeller noise were substantially lessened, many of the current objections against small fields would be eliminated.

For this reason above all, the Civil Aeronautics Administration is to be commended for its current activities toward noise abatement. Here is an attack on a fundamental problem, an attack which should have been made long ago. No immediate solution to the problem is likely to be found but it seems certain that until a solution is found, airparks will find resistance everywhere. The CAA deserves encouragement in its efforts to lick the problem.

WAYNE W. PARRISH  
AMERICAN AVIATION

## Wings of Yesterday

### 25 Years Ago

Lieutenant James H. Doolittle and Leland S. Andrews, U.S.A.S., established a new speed record between Kelly Field, San Antonio, Tex. and the Pacific Coast, covering 1200 miles in 13 hours, 25 minutes. (May 4, 1922)

The "Santa Maria," an Aeromarine 11-passenger flying cruiser, arrived in New York from Havana, Cuba, with nine passengers. Flying time was 17 hours, 35 minutes. (May 9, 1922)

### 15 Years Ago

The Daniel Guggenheim gold medal for 1932 was awarded to Juan de la Cierva for the development of the autogiro. (May 4, 1932)

Louis T. Reichers was forced down at sea and rescued by a steamship 47 miles west of Ireland on an attempted trans-Atlantic flight. Mr. Reichers was flying a Lockheed Altair equipped with a Wright Cyclone motor. (May 13, 1932)

## Obituary

### S. S. Bradley

Samuel S. Bradley, 78, chairman of the board of the Manufacturers Aircraft Association and aviation pioneer, died at his home in New York on April 9. He had headed the association since 1917 when the government and manufacturers drafted him to direct the organization established to stimulate production of military aircraft. In 1920 he organized the Aeronautical Chamber of Commerce, now the Aircraft Industries Association. He was credited with being the prime mover in establishing the original patent cross-license agreement which has prevented patent litigation within the aircraft industry, with the result that all companies have been able to adopt the most advanced developments for use in military and commercial models without restriction.

## Letters

### More on Rail Issue

To the Editor:

Unlimited congratulations to Robert G. Averil of Norseman Air Transport, Inc., for his excellent letter on your editorial sarcasm. Although I cannot improve on his letter, I wish to supplement his criticism. I have been associated with aviation for eight years and should, therefore, if anything, be biased toward it. However, I am unable to condone your glib and fatuous practice of trying to "out railroad the railroads" with indiscreetly poor rebuttal. Better to trust the public to properly evaluate railroad advertising practices. Although the apparent aim of your campaign is to fight fire with fire, it has only succeeded in "burning me up".

JAMES A. FRASER,  
Engineering Test Pilot.

## Readers Tell 'Why' of Executive Shortage

(An unusually heavy reader response was stimulated by the article entitled "Airline Head Explains Executive 'Shortage'", which appeared in American Aviation, April 1. Because of the continuing interest in this subject, three representative letters are reproduced herewith—The Editors.)

To the Editor:

"WHY is there a shortage of young men capable of assuming responsibilities in the air transport industry?"

That might be a more appropriate question than "Is there a shortage of junior executives in the air transport industry?" discussed in the April 1st American Aviation.

The airline president who stated that there is a shortage is perfectly correct. But the important thing is to know why, and to take corrective steps. The reason he gave for this situation—that young men want to do as little work as possible for the most money—is entirely inadequate.

If we are to find a solution we must be much more realistic about the causes. Probably the crux of the situation lies in the fact that so many qualified young men leave after the first few months just when they become of value to the airline. They are not "staying on through thick and thin" or "willing to fight it out over a period of years." And why should they?

Compared with other industries, what has air transport to offer?

An interesting job? Yes, but salaries are low, raises small, and promotions few. When better jobs are open the company often brings in talent from outside.

Financial security? Perhaps, but some companies' personnel policies are as capricious as their basic corporate financial structure. During this difficult period the cost of living has risen 30% but the airlines have not seen fit to adjust their wage scales except where unions have forced it.

Future? Yes, great, except that in many cases the salaries of air transport top executives are substantially smaller than those of executives in other industries requiring equivalent background, experience and ability.

Let us face the facts. The glamour has gone out of the airlines. Today air transport is big business, and as such, needs managerial talent for which it must compete with other big business. The type of men the airlines want are the same as those the steel industry, the railroads, or the banking business want. If the airlines are to be successful in their quest for young men of the calibre to become future executives, they must offer, in addition to interesting work, pay commensurate with that of similar jobs in other industries, a chance for advancement, increased responsibilities, and a worthwhile future.

Now let's become constructive in our thinking. One important thing most airlines lack is a well organized training program—a program for selecting and training properly the young men, the future executives, which the industry needs.

Typical of successful programs in other fields is that common among the country's leading banks. Qualified young men are accepted at a suitable salary and given a comparatively long period of training in which they spend a specified amount of time in each major department. This is necessary: (1) to give the trainee a broad background knowledge of banking operations; (2) to determine the particular branch of the banking business in which he is most interested and best qualified; (3) to make certain that he is definitely suited for a career in banking. At the close of this training period the trainee moves into a position of responsibility with increased salary and confidence of his future.

Admittedly the air transport industry cannot offer the stable security of the banking business. But the airlines can offer young men better training, more selective advancement and greater responsibility through well planned and publicized personnel programs similar to that outlined above.

MANUEL O. FANO, JR.,  
Brooklyn, N. Y.

To the Editor:

Your piece "Airline Head Explains Executive 'Shortage'" is most interesting. I happen to be one of those who considers himself well qualified for junior executive work. My opinion of myself is of no value nor interest to you. However, I do believe my experience in attempting to obtain junior executive work will be most pertinent to your article.

I would like to start this by giving my education first, then my business experience, and finally what has happened in my attempt to become a junior executive.

I am a graduate of Dartmouth College in 1934 after which I took the two-year course at Harvard Graduate School of Business Administration. Finally I spent two years at night school at New York University. While at Harvard I specialized in selling and sales management.

In January of 1937 I took a position with one of the major airlines—I was a ticket delivery boy at \$65 a month. Since that time I have held the following positions: salesman, sales office manager, instructor in the sales school, first officer, and captain.

Approximately one year ago I went to the top management of the airline and said that I did not want to continue flying as my interests were more in administrative work. I received many hearty whacks on the back and was told that a man with my education and experience was just what they needed. This scene was repeated many times.

I have now come to a point where I feel that I must stop active flying as it is not helping me to obtain my objective. This feeling has been transmitted to top management whose only comment is "you couldn't have picked a worse time."

The summer of 1946 was just about the best in the history of the airlines so should have been the best in which to make a change but nothing was offered me. The only conclusion that I can draw is that there is no good time to make a change.

In all fairness to the airlines I do suppose that they would give me a job in the sales department at \$250 a month. However, I feel that if I'm not worth \$400 a month to them I'm not worth a nickel.

It all boils down to this—is there a future in the airlines? I personally have serious doubts when my services on the open market will bring more than the airline will give.

The airlines have junior executives available but they have in a great many cases stifled them and lost them to other industries.

W. G. GILMORE, 3RD,  
Port Washington, N. Y.

To the Editor:

I would like to answer your article "Airline Head Explains Executive 'Shortage'".

I have been reading your magazine for some time. But this is the first time that I have read anything that wasn't honest and frank. Everyone knows that the airlines are a poorly paid industry. The pilots are the only people who make big money. I don't know of anyone in aviation today who makes \$1500.00 a month. The plight of the underpaid co-pilots is sufficient evidence from a salaried standpoint.

No one's future in the airlines is assured today. On Friday, March 7, 1947, our airline let 1500 people go. In that reduction many people who had worked for the company 15 years were dismissed. What can any man think a future here offers?

The average person does want to work but he wants a just return for his efforts. He doesn't want to experiment with security. He wants the highest prices for his services today not tomorrow, which may never come!

I personally, believing in the great future that aviation offers, stepped down from a higher paying job to work at anything in order to start on the ground floor. But all the airlines are suffering from a poor selection of personnel. They put any man in any job that's open regardless of fitness and ability. This excludes technical ability.

So let's have your airline president answer this one.

NAME WITHHELD.





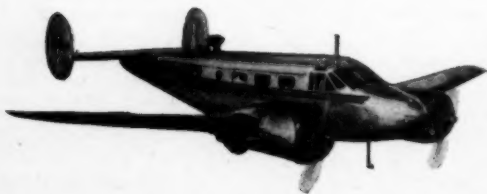
## "Be back for dinner, Daddy"

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# Background and Trends

(Significant Developments and Forecasts Based on the Fortnight's Top News)

**DC-3 Replacement:** Watch for Douglas Aircraft to re-enter the twin-engined transport field with a replacement for the DC-3. Both the Martin 202 and Convair 240 have gross weights in excess of maximum which many foreign airlines require for small airports. The new Douglas plane would have a gross of about 30,000 lbs., with 25-30 seats, speed of 250 mph, to fill niche in market below the Martin and Convair. Might be an answer to the feeder plane market, also.

**Relaxation:** For 20 years Paul Richter has been one of the airline industry's most-respected and able executives. Now that he has resigned as executive vice president of TWA over differences with the inexperienced Hughes' interests, he is seeing old friends, getting re-acquainted with his family, fishing and hunting. He intends to relax for 4 to 6 months. He'll be back in aviation—that much is certain.

**In the Black:** Trans World Airlines' international division was in the black in June of 1946, then dropped into the red because of the Connie groundings and pilot strike. It is now reported that the division will be in the black in May, almost reached that point in April.

**No Merger Now:** Despite gossip-column rumors, there is no possibility of a TWA-PAA deal now.

**Seats vs. Landings:** One airport in the South gets a higher revenue from pay toilets than it does from landing fees.

**Opposition:** A couple of overseas cable companies have been trying to scuttle the Post Office Department's 10c lettergram. At a time when they're asking higher rates, the cable companies hate to see a letter that can be sent anywhere in the world for 10c. Best guess is that they won't be able to do anything about it.

**Revenue Producers:** How large planes produce revenue: In the first 24 days of March, TWA's 62 DC-3's produced domestic revenue of \$1,400,000. Twelve Constellations produced \$800,000 domestically. In other words, less than one-fifth as many four-engined planes produced nearly 65% as much revenue as twin-engined craft. And Connies were utilized only 5 hrs. 40 min. per day; DC-3's 9 hrs. 43 min.

**Stymied:** Heat was on some time ago to get a bill introduced in Congress setting up domestic air parcel post system. Post Office air mail officials had prepared such a bill. Now, however, it is evidently pigeonholed somewhere in the PO. Nothing has been heard about it for weeks.

**Remember Hester?** Convivial Clinton M. Hester, first Civil Aeronautics Administrator, dropped out of sight after he left CAA a few years later. But he isn't inactive in aviation even today. He's been doing some important behind-the-scenes work for a client.

**Eaker Into Politics?** When Lieut. General Ira Eaker, for a very long time a strong force in the AAF, retires next month, he will go to Washington State where he has some newly-acquired newspaper interests. Some folks are speculating that shrewd, poker-playing Eaker will enter state politics and might even show up in Congress one of these years.

**Lesson:** Army and Navy already are working on plan for taking over needed airline planes in case of emergency. Both services are seeking to avoid repetition of early World War II failure to have sufficient transports on call.

**Bad Month:** Official reports to CAB indicate operating loss of \$7,940,000 for domestic airline industry in January, not including Northeast whose report is not yet available. This exceeds net loss of \$7,214,000 shown by domestic carriers for all of 1946.

**Europe Bound:** Practically all available trans-Atlantic space is being filled as air travelers head for Europe at a rate of about 1,500 a week on U. S. airlines alone. New schedules are being added, with airlines nearly tripling January business. American Overseas, Pan American, and TWA report average of 30-32 passengers on each flight eastbound from U. S. of which there are 40 weekly.

**Export Goal:** Reliable manufacturing sources expect personal plane production to approach 25,000 units in 1947, with 5,000 of these going to export market. However, 10 companies reporting to the Aircraft Industries Association showed 93 aircraft exported in March, or only 5.8% of their total production. February exports by same firms totaled 156, or 6.2%.

**Confusion:** A confused American air policy is blamed by industry officials for fact that some aircraft companies have been forced to lay off engineers, or have lost them to non-aviation industries, at a time when U. S. is faced with most perplexing aviation engineering problems ever known.

**Comparison:** According to a report on corporation earnings by the National City Bank of New York, 1500 corporations of all kinds increased their earnings by 36% in 1946 compared with 1945, while the aircraft industry's earnings declined by 95% in the same period.

**Certification:** Glenn L. Martin Co. is shooting for type certification of its 202 transport in July, by which time 30 planes are expected to be ready for delivery. Consolidated Vultee is hopeful of certification of its pressurized 240 by August.

**Tax Jurisdiction:** Rep. Carl Hinshaw (R., Calif.), ranking member of the House Interstate and Foreign Commerce Committee, has under consideration introduction of a bill to reserve for Federal government the taxation of aviation fuels, leaving to the states taxation of motor fuels purchased by highway users. A Federal gasoline tax of 1½% is now collected on both highway and aviation fuel. The proposed Hinshaw bill is seen as a possible answer to demand that aircraft owners and users pay more toward maintenance of the Federal airways system.

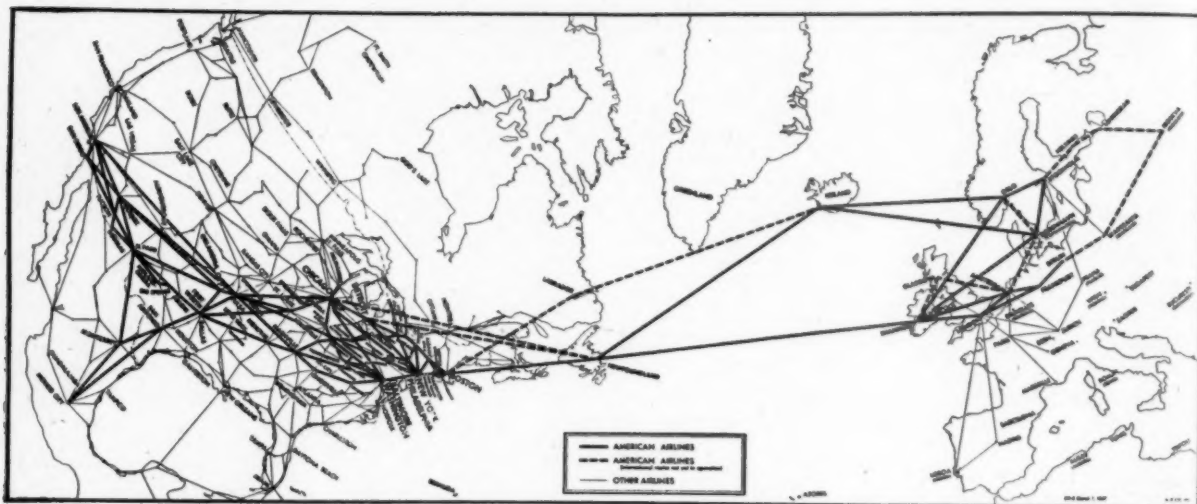
**Trouble:** A feeder airline, which recently received a certificate but has not yet opened service, has informed CAB it does not intend to start service. Company advanced several reasons why it can not do so. Discussions were to be held with CAB as this issue went to press.

**Airline Fines:** Post Office Dept. estimates that during fiscal 1948 domestic airlines will be fined \$350,854 for mis-handling the mail, delaying it, overcarrying, etc. Estimate is based on previous experience. PO doesn't collect fines in cash, but deducts them from mail pay. Actually, \$350,854 means a good airline record rather than a poor one. Only an extremely small percentage of mail pouches are mis-handled.

**No Change:** Pennsylvania-Central Airlines won't change its corporate name to Capital Airlines, as had been previously planned. However, the name Capital will be predominant. Company for corporate purposes wants to be known as Pennsylvania-Central Airlines Corp., operator of Capital Airlines.

**Douglas Shines:** The annual report of Douglas Aircraft Co. for the last fiscal year was one of the most readable and most attractive ever issued by an aviation company.

**ACI Budget:** Air Cargo, Inc., the scheduled airlines' ground service organization for cargo, has a budget of \$89,633 for the period Feb. 15 to July 1.



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## \$60 Million Fund Cut Confronts CAA

### House Appropriations Committee Expected to Slash Request for 50% Personnel Hike Sought by Agency

By GERARD B. DOBLEN

The House Appropriations Committee, scheduled to report to Congress May 2, had under consideration last week a \$60,000,000 slash in Civil Aeronautics Administration appropriation requests for the fiscal year beginning July 1. CAA had requested \$189,994,000 and some authoritative sources indicated the agency's total budget might be fixed as low as \$125,000,000.

In terms of employees, CAA's budget requests entail a 50% increase from 12,000 to 18,000. The House committee, which last year severely criticized CAA for the ratio of one employee for every three aircraft, was expected to lash out against CAA for the continuation of this trend. One committee member cited the fact that CAA's information service alone had grown from 11 at the time of its inception to a requested 118 in current budget requests, or an increase of 932%. CAA, in defense, explained that its information unit today embraces many new services for the aviation industry.

There are members of the House Appropriations Committee who believe that CAA has become far too paternalistic in its supervision of the air transport and aircraft manufacturing industry. They doubt that industry needs the degree of regulation it is receiving and they are certain that industry does not want it.

There is strong indication that leaders in the airline industry will spend more and more time in the future in placing their case before Congress in the interests of eliminating some of this supervision and regulation. The airline industry wants more responsibility for policing itself and may achieve this objective through the proposed creation of the National Aviation Council on which it hopes to have a voice and a vote on policies which directly concern it. Legislation to create such a Council, to replace the Air Coordinating Committee, is now before Congress.

Cuts being considered were understood to be on the basis of committee study and recommendations of a four-man team of investigators who made a thorough study of CAA expenditures since 1941.

By items, the following cuts were being considered: Operation and maintenance of air navigation facilities, approximately \$10,000,000 or 16%;

general administration, \$1,470,000 or 20%; maintenance and operation of aircraft, \$300,000 or 15%; technical development \$1,500,000 or 43%; Federal airport program, \$32,500,000 or 50%; enforcement of safety regulations, \$975,000 or 9% and establishment of air navigation facilities, \$8,000,000 or 31%.

The committee had before it data on operating and maintenance figures of Federal airways on a per mile cost. It found that in 1941 when the Federal airway system totaled 34,296 miles, the cost was \$334 per mile. By the end of fiscal 1947, it was estimated that the Federal airway system of 47,911 miles would cost \$844 per mile. On the basis of CAA's current budget requests, this cost would jump to \$1,065 per mile in 1947-48.

The committee also was giving close scrutiny to CAA's costs involved in the operation of a fleet of more than 200 aircraft. Information was received by the committee that CAA planes are sometimes used on flights not strictly connected with government business.

Reduction of the appropriation request of \$25,000,000 for establishment of air navigation facilities to approximately \$17,000,000 was being consid-

ered on the grounds that information from competent CAA and airline engineers revealed that this figure represented the total amount of funds which could be obligated during 1948, on the basis of the present equipment situation. CAA has an additional \$9,000,000 from its 1947 budget for establishment of air navigation facilities which has not been encumbered.

The committee had under consideration reduction of CAA's request for \$3,500,000 for technical development to \$2,000,000. This reduction was being considered for this year so as to enable the committee to give further study to duplication in research and developmental activities on the part of different departments of the government.

In view of the fact that CAA has \$40,000,000 in unexpended funds for the smaller airports program, the committee was considering a reduction of 50% in the Class IV and larger airport program on the basis that the \$65,000,000 request for larger airports could be considered as part of a three-year program for approximately \$105,000,000.

Rep. Karl Stefan (R., Neb.), chairman of the Appropriations subcommittee handling CAA budget requests, was leading the fight to bring CAA's 1948 budget in line with the Republican economy program.



**Airmailer**—New helicopter model designed and produced by Bell Aircraft Corp. specifically for service on helicopter air mail routes proposed by the U. S. Post Office Department is the "Airmailer" shown here. Compartments, with hooks for mail bags and a capacity of approximately 500 lbs. of mail, are provided on each side of the craft. The model has a choice of cockpit compartments either open or enclosed.

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# Cross-Wind Landing Gear Plan Extended to Transports

By KEITH SAUNDERS

Pleased with results to date in its program for development of cross-wind landing gear, the Civil Aeronautics Administration has now extended the program into the twin-engine field, AMERICAN AVIATION learned this week.

Lloyd H. Child, assistant to the administrator for personal flying development, said an experimental contract had been awarded to All-American Aviation, Inc., of Wilmington, Del., for development of a castered gear for a CAA-owned twin-engine Beech.

Still another contract, calling for adaptation of the castered gear to a DC-3, has been drafted but may not be let for a while because there is not sufficient money left in CAA's experimental fund of \$150,000 with which to finance such a project. There is a possibility, Child said, that CAA and the Army might jointly underwrite a contract with Douglas Aircraft Co. for a DC-3 castered-gear project.

Development of a satisfactory cross-wind landing gear for the Beech should pose no engineering problem of any consequence, Child said, since the castering mechanism can readily be installed in the oleo section of the present gear. The DC-3 installation will be more difficult, he said, but not prohibitively so. Neither installation should make any appreciable addition either in cost or in weight.

## Ignore Wind Direction

In its cross-wind landing gear project, designed to make it possible for planes to land or take-off on two-way strips without danger of groundlooping, regardless of wind direction, the CAA to date has awarded experimental contracts to the Fairchild, Goodyear, and Firestone companies.

The Fairchild-built gear, adapted to a low-wing PT-19 trainer, has been accepted by CAA and is undergoing extensive service testing now at National Airport. The Goodyear gear, installed on a Piper J-3, has been demonstrated successfully but will not be formally accepted by CAA until some modifications have been made. The Firestone gear is being put on a tricycle-gear Ercoupe, which is about ready for testing.

Once it has been proved that the castered gear can be adapted successfully to single-engine and twin-engine planes, increasing their utility and safety without increasing their cost or weight, CAA hopes to induce aircraft manufacturers to make the gear standard equipment for all such plane types.

This would enable a vastly increased number of communities to build good single-runway airports which would serve their needs, and would enable hundreds of other cities with outlying

airports to build close-in strips for the convenience of flying visitors and local lightplane owners.

Whether CAA will attempt to have a castered gear developed for four-engined planes has not yet been decided. Some airline people say crosswinds do not affect operation of such planes, but CAA thinks otherwise, and would like to see a castered gear developed for them.

## Cohu Elected New President of TWA; Pierson Heads Board

LaMotte T. Cohu, chairman of the board and general manager of Northrop Aircraft, Inc., was elected president of TWA by the board of directors on April 24. He succeeds Jack Frye, who announced his resignation last February.

Warren Lee Pierson, president of American Cable and Radio Corp., was elected chairman of the board and managing director of the company's international division.

Also announced was elimination of the position of executive vice president which had been held by Paul E. Richter, co-organizer with Frye of TWA's predecessor company. Richter resigned from TWA on April 7.

The following TWA officers were re-elected by the board: John A. Collings, v. p.-transportation; Otis F. Bryan, v. p. and acting general manager of the international division; E. O. Cocke, v. p.-traffic; J. C. Franklin, v. p.-engineering; H. B. Miller, v. p.-public relations; Clarence Fleming, v. p.-regulatory proceedings; J. M. Lockhart, treasurer; Leo Gilleran, controller; A. M. Jens, secretary; Milton McQueen, assistant treasurer; W. M. Streetman, T. M. Sullivan, Myra E. Black, and C. W. Herre, assistant secretaries.

Preceding the meeting of the board of directors, the stockholders elected 14 directors as follows: Cohu; Pierson; Collings; Palmer Bradley, Houston attorney; Powel Crosley, Jr., president of Crosley Motors; Noah Dietrich, executive v. p. of Hughes Tool Co.; A. V. Leslie, Dietrich's assistant; Sidney Maestre, St. Louis banker; A. D. Simpson, Houston banker; Nelson S. Talbott, Dayton, O., industrialist; Lloyd Wright, Los Angeles attorney; W. M. Streetman, Houston attorney; Mayor Oscar F. Holcombe, of Houston; Arthur B. Eisenhower, Kansas City banker and brother of Gen. Dwight Eisenhower.

Cohu, Dietrich, and Leslie will serve as the executive committee.

Cohu, a member of TWA's board



LaMotte T. Cohu

since 1933, organized Air Investors, Inc., in 1928, and also Interstate Airline which is now a part of Eastern Air Lines. In 1930 he became a director of Aviation Corporation and served as its president, as well as president of American Airways and American Aircraft and Engine Co. in 1931-32.

He also was a director of Air Associates from 1930-33 and a director of North American Aviation, Transcontinental Air Transport, and Eastern Air Transport in 1933-34.

Pierson practiced law in Los Angeles until 1933 when he became a special counsel for the RFC in Washington. He is a director of the International Telephone and Telegraph Corp., the U. S. Commercial Company, and Rubber Development Corp.

## Jack Frye Elected Board Chairman of General Aniline

Jack Frye, former president of TWA, has been elected chairman of the board of General Aniline & Film Corp. and of General Dyestuff Corp., sales agent for General Aniline. General Dyestuff is wholly owned and General Aniline is 97% owned by the U. S. government through the Office of Alien Property of the Department of Justice. The companies, which were controlled by enemy aliens, were seized by the U. S. at the outbreak of World War II.

## Pan Am Forced to End Bermuda Flights May 1

Pan American Airways was allowed to continue its Washington-Bermuda and Boston-Bermuda flights until April 30 by special Civil Aeronautics Board permission. PAA asked for the privilege of continuing the service until the end of April after CAB stopped the two operations because they were being flown under authority granted to the airline in error. (AMERICAN AVIATION, April 15, p. 32).



## Aviation Calendar

May 1-2—SAE Personal Aircraft Meeting, Lassen Hotel, Wichita, Kans.

May 1-2—AIA Eastern Regional Traffic Committee, Hartford, Conn.

May 5-10—International Travel Exposition, Grand Central Palace, New York.

May 6—ICAO Assembly Meeting, Montreal.

May 8—Women's National Aeronautical Association national convention, Los Angeles.

May 8—CAA-sponsored state aviation forum, Atlanta, Ga.

May 8-9—ALA Western Regional Traffic Committee, Los Angeles, Calif.

May 9-10—Annual Michigan Aeronautical Conference, Hotel Olds, Lansing.

May 9-10—"St. Louis Air Fair of 1947" regional aircraft show, St. Louis Arena, sponsored by Aviation Council of Metropolitan St. Louis.

May 11-15—American Association of Airport Executives annual convention, Sherman Hotel, Chicago. (Airport exposition and exhibit trade show to be held in conjunction.)

May 14-16—Aircraft Industries Association board of governors meeting, Williamsburg, Va.

May 15—IATA Technical Committee meeting, Miami Beach, Fla.

May 16-22—Third International Air Service Exhibition (Aerofair), Utrecht, The Netherlands. Postponed from April 16-22.

May 19—New York State Aviation Council spring meeting, Syracuse Yacht and Country Club, Syracuse.

May 21—CAA-sponsored state aviation forum, Jackson, Miss.

May 23—Fourth New England Aviation Conference, auspices New England Council, Hotel Statler, Boston.

May 24-June 1—Michigan Aviation Week. Aircraft show at Detroit.

May 26-27—Institute of the Aeronautical Sciences light aircraft meeting, Detroit.

May 26-29—American Society of Mechanical Engineers, aviation meeting, Los Angeles.

May 29-June 1—Annual Mississippi air tour sponsored by Jackson Chamber of Commerce.

May 30-June 1—Philadelphia Air Races, Northeast Airport, Philadelphia.

June 1-3—Aviation Writers Association annual convention, Los Angeles.

June 1-6—SAE Summer Meeting, French Lick Springs Hotel, French Lick, Ind.

June 2-4—National Aeronautic Association annual meeting, Ft. Worth, Tex.

June 3-4—Personal Aircraft Council, AIA, meeting in Los Angeles.

June 4-6—Aero Medical Association, 18th Annual Meeting, Hotel Ritz-Carlton, Atlantic City.

June 7-8—13th Annual National Air Carnival, Birmingham, Ala., sponsored by Birmingham Aero Club.

June 9-10—Aeronautical Training Society, annual meeting, Mayflower Hotel, Washington, D. C.

June 17—ICAO South American Regional Air Traffic Control Meeting, Lima, Peru.

June 18—CAA-sponsored state aviation forum, Charlotte, N. C.

June 30-July 1—Aviation Distributors & Manufacturers Association directors and committee chairmen meet, Grand Hotel, Mackinac Island, Mich.

July 3-6—International Air Races, Long Beach, Calif., Chamber of Commerce sponsor.

July 4-20—International aircraft exhibition, Halle du Cinquantenaire, Brussels, Belgium.

July 4-20—Southwestern Aircraft Show in conjunction with National Sourcing Meet, Wichita Falls, Tex.

July 15—ICAO South Atlantic Regional Air Traffic Control Meeting, Rio de Janeiro.

## Delta Loses Eight Key Officials in Survey Flight Accident

At no previous time in aviation history has an accident removed so many key officials of an airline as did the Delta Air Lines accident at Columbus, Ga., on Apr. 22.

The accident, caused when the Delta combination cargo-passenger C-47, making its approach to Muscogee county airport, was struck by a PT-13, took the lives of eight men holding important positions with the airline.

Killed were George R. Cushing, 48, vice president-operations; Lindley W. Camp, 55, Delta attorney and solicitor of Fulton county criminal court; H. R. Bolander, 37, director of properties and state relations; L. T. Campbell, 40, superintendent of communications; E. A. Rainouard, 38, chief flight superintendent; John L. Schneider, 37, superintendent of stations; Clayton Berry, 33, station construction engineer, and J. V. Little, 38, Atlanta district traffic manager.

A closely-knit organization, Delta is more of a family than almost any other airline. Because of the intimate manner in which Delta officials worked together to operate the airline, the loss of key manpower will be sorely felt.

It was Delta's first fatal accident in 12 years, and the company had flown 573,539,075 passenger-miles since its previous fatal accident in 1935. The plane going into Columbus was not

on a scheduled trip, but was making a survey flight of cities on one of Delta's new routes. The Columbus field does not have a control tower.

George Cushing was one of the best-loved and most capable men in the air transport industry. A colorful, outspoken and genial pilot, he came up the hard way in the industry and built up an exceptional record with Delta. He was an old air mail pilot, flying mail out of Atlanta, New York and Miami in 1928, and since that time had flown more than a million and a half miles in almost every type plane. He held transport pilot certificate No. 511. From 1927 to 1935 he was with Eastern Air Lines, serving as mechanic, dispatcher, field manager, captain, line superintendent, superintendent of maintenance, and vice president and general superintendent.

He joined Delta in 1935 as a pilot, became chief pilot in 1937, operations manager in 1940, and vice president-operations in 1945.

Bob Bolander began his aviation career with Chicago & Southern Air Lines and succeeded Amos Culbert as vice president of that company when Culbert joined American Airlines. In February, 1946, he resigned from C&S and joined Delta where he was rising steadily as an important factor in that company.

Lindley Camp handled legal matters for Delta in Atlanta and was one of the most prominent and powerful politicians in Georgia, with a host of friends in the south.

Also killed in the crash was Jack Fussell, of Columbus, pilot of the PT-13, a converted Army plane.

## Editorial

April 22, 1947, will be remembered as a day on which a lot of people in aviation lost some of their best friends. From an aviation standpoint, the Delta accident at Columbus, Ga., was a very personal loss felt throughout the industry. From one end of aviation to the other, all are extending deepest sympathies to an airline which has had no superior in the world for sincerity of purpose and effort to bring to air transport the best that human beings can give.

George Cushing was a rough, genial, colorful and extremely able pilot and executive whose geniality and infectious sense of humor will be sorely missed. Bob Bolander was an able young lawyer whose influence on industry policy was felt from coast to coast. Lindley Camp, unknown to most people in aviation, was an Atlanta attorney with a vast host of friends and completely devoted to the Delta family—the kind of a guy who would give the shirt off his back for those he liked. Larry Campbell and the others were good, solid, sound, home-folks of the type that make an airline great.

This is the kind of editorial that is hard to write. Words carry so little meaning when tragedy is personal. In this trying time for C. E. Woolman and the Delta family, we join with all in aviation in expressing our deep sorrow.

WAYNE W. PARRISH

### Venezuela Cancels PAA Rights

The Venezuelan Government has informed Pan American Airways that its rights to carry domestic traffic in Venezuela have been cancelled. However, Venezuelan President R. Betancourt has informed the airline that the effective date of the cancellation order may be extended to avoid injury to the company.

### PCA Sees \$2,750,000 Mail Pay

Civil Aeronautic Board's order in fixing new and increased temporary airmail pay rates for Capital Airlines (PCA) will result in airmail revenues during 1947 for the airline of about \$2,750,000 as compared with \$388,000 received during 1946 under the former rate, it was estimated by R. G. Lochiel, company vice president and treasurer.

# McCarran Offers Defense Of Chosen Instrument Plan

## Originator of Proposal Takes Issue With Critics

By SEN. PAT MCCARRAN

(Dem., Nevada)

As the originator of the proposal for establishment of a community company to conduct world-wide operations under the American Flag in the field of international air transportation, and as co-sponsor of the bill S. 987 which, in the present Congress, embodies this proposal, I have been asked to comment on some of the questions involved particularly with respect to points raised in an article appearing in the April 15 issue of *AMERICAN AVIATION*.

At the outset, let me clear up a widespread misconception.

It has been stated that the proposal for a single consolidated carrier to operate under the American Flag on the air-trade routes of the world is opposed to the theory of "regulated competition."

This necessarily implies that the system we have now is "regulated competition." But that is not true.

Where all competing factors are subject to regulation, competition can be regulated. Where some competing factors are not subject to regulation, competition cannot be regulated.

We are today regulating, to some extent, the competition among American Flag carriers, operating internationally; but we are not regulating and cannot regulate, the competition between those American Flag carriers and their foreign competitors.

### Competition Between Nations

The real competition in the field of international air transportation is between nations, not between companies. That is a fact, and not a theory. It is a fact which must be recognized. We cannot regulate that competition; we can only meet it. And it is only plain, old-fashioned American common sense to meet that competition with a united front.

The "two important questions" referred to in the article in the April 15th issue of *AMERICAN AVIATION*, namely "(1) Shall the U. S. establish the chosen instrument policy in international air commerce? (2) Shall steamship companies be permitted to operate air services internationally?" cannot realistically be considered separately.

If the first question is answered in the affirmative, the second question also is answered, necessarily in the negative.

It would be a contradiction to merge or supersede the present air line companies operating internationally under the American Flag, in order to eliminate duplication, and then create new duplication by authorizing separate in-

ternational air operations by steamship companies.

It has been stated that S. 987 "would destroy the corporate entity of Pan American, American Overseas and Panagra air lines." This is not true.

With respect to existing international air carriers, the proposed consolidated international carrier would have two alternatives, either or both of which

*Although AMERICAN AVIATION remains strongly opposed to the creation of a government-subsidized monopoly in international air transportation, it is pleased to present herewith the views of Sen. McCarran, in keeping with its policy of airing all sides of controversial issues.*

might be specified under the plan to be approved by the Civil Aeronautics Board.

The first of these alternatives is to acquire all of the assets of the existing carriers.

The second alternative is to acquire all of the outstanding stock of the existing carriers.

If the first alternative is selected, the existing corporation, such as Pan American or American Overseas, would remain a corporate entity, holding as assets stock of the new consolidated international carrier.

If the second alternative should be chosen by the CAB, the ownership of Pan American or American Overseas, for instance, would pass to the new consolidated international carrier, and the stockholders of the existing carrier would receive shares in the new consolidated carrier.

In the latter case, stockholders who received individually more than 3 percent of the total stock of the consolidated carrier would have to dispose of the excess within 6 months; but the existing corporation, Pan American or American Overseas, as the case might be, would have nothing to say about the disposition.

If the assets of an existing corporation operating as an international air carrier should be acquired by the consolidated carrier, it is not to be expected that the Civil Aeronautics Board would so far overlook the realities of the situation as to permit the existing corporation a free hand in disposal of its newly-acquired stock in the consolidated carrier.

The realistic course, and the course which I should expect the Civil Aeronautics Board to direct, would be sale by the existing corporation, on the open market, of its excess stock in the consolidated carrier; which would leave the existing corporation in somewhat the position of an investment trust, holding the proceeds from the sale of such stock for such disposition as its

own stockholders might approve.

Too much has been made of the provision in section 2 of S. 987, stating that stock, notes, or other securities or evidences of indebtedness acquired by an air carrier after October 25, 1945, need not be acquired by the consolidated carrier. That date has no special significance. Actually, it is the date the next-to-final draft of my second revision of S. 326, of the 79th Congress, was completed.

The purpose of inserting a "deadline" provision of this nature in the bill was to avoid making the bill an inducement to speculation in the securities of foreign air carriers.

The Congress and its committees, on basis of conditions existing when the action, is taken, can write into the bill whatever date seems best justified.

Certainly there will be no argument that some deadline is not needed. The only question will be where the deadline should be fixed; and this question is not likely to involve substantial controversy.

In the April 15 issue of *AMERICAN AVIATION* it was stated that "Some lawyers feel the bill is defective in that CAB or the policy committee, which is formed under the bill, cannot compel adequate service." This is an uninstructed statement. Section 1207 (d) of the bill provides that:

"If the Board is of the opinion that routes or services in addition to those being operated by the consolidated carrier are required in the public interest . . . the Board shall give notice to the consolidated carrier to that effect. Unless within 20 days after the receipt of such notice the consolidated carrier shall file with the Board a statement of service plan complying with such notice and shall thereafter diligently proceed to initiate such service, the Board may require the consolidated carrier to take action in accordance with such notice." That conveys full authority to the Board to require adequate service.

### Interpretation Questioned

The "air line lawyer" who is quoted by *AMERICAN AVIATION* as saying that quoted language from subparagraph (9) of section 1203 (b) of the bill "does not give the Board or the policy committee any authority to direct the chosen instrument to operate to any country having less than 5 million persons" obviously was less than thorough.

The quoted language refers to a required provision of an agreement which the consolidated carrier is to enter into. This agreement covers broadly the obligation of the consolidated carrier to render air transportation service between the United States and every country in the world having a population of more than 5 million persons to which such service can be operated, except where the Civil Aeronautics Board, on the recommendation of the policy committee, relieves the consolidated carrier of that obligation.

The authority of the Board to require needed service, to countries with populations smaller than 5 million, as well as to other points, is contained in section 1207 (d), from which I have quoted above.

There is no doubt that consolidation

AMERICAN AVIATION



of all international air transportation operations under the American Flag, in a single community company, will reduce the total over-all need for subsidy.

In the first place, the mere existence of a community company will eliminate much wasteful duplication.

The community company will not be burdened with the necessity for maintaining duplicate staffs and base facilities all over the world.

It will have more business than any single element of our present system can have.

It will have more flexibility in transferring equipment to meet seasonal peaks.

Its operations on the more heavily traveled routes will provide profits which will assist in meeting the cost of operating the so-called "national interest" routes, which must be operated but which will be uneconomical for years to come.

Our present system of subsidies, through mail pay, involves wasteful duplication, and involves the subsidization of separate American companies which are competing one against the other. All that will be eliminated by creation of the single community company.

Previous bills which I have introduced, embodying the community company principle, have been criticized because, it was said, the subsidy provisions were too broad, or not sufficiently specific. The new bill, in the sponsorship of which Senator White, Senator Brewster, and Senator McMahon have joined me, nails down the subsidy provisions most explicitly.

I suppose it will now be criticized on the ground that it is too explicit.

There is always room for doubt with respect to any constitutional question, since no matter how clear the particular question may seem, you can always find someone to argue on the other side.

To me it seems clear that the Gold Clause case and the line of decisions from which it stems clearly supports the right of the Congress, by law, to compel the sale of assets of existing corporations engaged as international air carriers, even to the point of requiring acceptance of stock in the new consolidated carrier in lieu of cash, where this is done to serve the national interest. No confiscation is involved.

However, if the Congress should be troubled by attacks on the constitutionality of this requirement, it would be a simple matter to rewrite the section so as to provide for payment in cash for the assets acquired by the consolidated carrier; and I seriously doubt that even the most captious critic would question the constitutionality of such a provision.

My first bill to establish a community company was criticized on the grounds that it spelled out too rigidly the program for creation of a consolidated carrier.

It was argued that the various factors of the American transportation industry should have something to say

about the matter, and that detailed provisions should be worked out by the Civil Aeronautics Board after public hearings.

Subsequent redrafts of the bill, including the present one, have been criticized for providing that details of the plan for creating the consolidated carrier shall be worked out by the Civil Aeronautics Board after public hearings.

It all boils down to the fact that some people simply do not like the idea of a community company, and are going to find fault with any bill which is drafted to implement the community company policy.

International aviation under the American Flag stands today at the same crossroads where, decades ago, international shipping under the American Flag took the wrong turn. This time, for the sake of our national welfare, we must choose wisely. I am confident that the Congress, after weighing all the evidence, can be relied upon to make an intelligent decision.

## ACC Opposes Chosen Instrument Proposal

The Air Coordinating Committee threw its weight behind the present competitive system of U. S. international air transport on Apr. 17 when it decided unanimously to oppose the chosen instrument. The committee's position is expected to be an important factor in current Congressional hearings on the chosen instrument.

ACC, which is the President's interdepartmental committee to coordinate, U. S. aviation policy, informed Sen. Wallace White (R., Me.), chairman of the Senate Interstate and Foreign Commerce committee, that its unanimous judgment was that "the existing policy of regulated, limited competition . . . should be continued."

"Experience to date in both the economic and foreign relations fields warrants the continuation of competition between U. S. airlines in the international field. From the point of view of national defense, there are no factors making a step to the chosen instrument necessary at the present time. It is considered that the stimulus to progress provided by competition should be maintained unless and until experience in the future might prove otherwise."

ACC's letter to Sen. White was in response to a request for comment on S. 987, which would establish a consolidated company. Members of ACC are the State, War, Navy, Commerce and Post Office departments and the Civil Aeronautics Board.

### Van Zandt Supports Competition

Competition in the field of international aviation, rather than a single international organization which would own and operate all international air services on a regional or worldwide basis, was supported by J. Parker Van Zandt, Brookings Institution's director of aviation research, in a recent lecture at McGill University, Montreal.

## Ship Interests Open Congressional Fight For Airline Routes

After several years of effort, shipping companies last week were successful in placing before a Congressional committee of jurisdiction their arguments in support of amendments to the Civil Aeronautics Act which would give them the clear right to operate international air routes.

Opening the case for the shipping companies, Chairman Fred Bradley (R., Mich.) of the House Merchant Marine and Fisheries committee, stated "My bill simply accords steamship companies the same status as any other applicant when applying to CAB for the right to use aircraft."

Shipping interests obtained questionable support from the State Department which stated it would interpose no objection to steamship companies operating international air routes but in criticizing the provisions of four bills under consideration, it created a lot of tough questions for the committee to answer. If CAB were given a mandate to certificate steamship companies, Garrison Norton, assistant secretary of state, predicted that the entire, existing international air route pattern would be affected.

William A. M. Burden, assistant secretary of commerce, said the present Act is adequate to permit award of routes to shipping lines if CAB finds it to be in the public interest.

U. S. Chamber of Commerce, on the basis of a poll of 1843 member organizations, was overwhelmingly in support of the shipping company position. The U. S. Maritime Commission said Congress should establish in clear and unequivocal terms a policy to permit right of entry of the ocean carrier into the field of air transportation.

### Chosen Instrument Position

While fighting for air routes, the steamship companies, through the Sea-Air Committee, have claimed that within framework of Chosen Instrument bills now before Congress:

"(a) Pan American could increase its capital stock in such an amount that the present stockholders would represent 45% of the company and the new stock would represent 55% of the company. At the end of this phase we have the present Pan American stockholders as a group with stockholdings diluted to a point where no individual stockholder owns more than approximately 3% of the enlarged Pan American company.

"(b) All of the American flag airlines which have foreign operations would be compelled to sell all of their overseas holdings and such of their equipment as was allocated to their foreign operations to Pan American—it should be noted that they are not joining any consolidation or newly formed quasi-public corporation but are becoming minority stockholders in the now existing Pan American."

## Flying Jets Being Geared for Speed Tests

By FRED HUNTER

The stove-pipe jobs—the fast-flying jets—will whine in a crescendo of fury in the skies over the military flight test base at Muroc, Calif. in the coming months.

Pursuits and bombers both will be represented in the Army and Navy test programs to develop the nation's war planes of the future, and it seems likely that almost every manufacturer in the country will be represented before the year is over.

The most spectacular phase of the work at Muroc will be the assaults on the speed of sound, but of utmost importance will be the more prosaic spade work attending the flight experiments with the new post-war designs that are counted on being the backbone of the country's air force. They're the planes in the 500 mph and upward class, but not calculated to venture into the supersonic ranges.

Lockheed Aircraft Corp. still has designs on Britain's 616 mph record for a measured course with a souped up P-80, which company engineers believe can attain a speed of 630 mph. The plane now is undergoing work at the Lockheed factory preparatory to sending it to Muroc. The aspect ratio of the wing has been changed, a smaller canopy installed and the power plant equipped for water injection to give the craft added oomph.

Lockheed has another jet whizzer in the works, the XP-90, but it still is

a long way off.

North American Aviation, which, until it set sail in the personal plane field with the Navion, has been exclusively a builder of military aircraft, has so extensive a Muroc test program scheduled that it has set up shop at a point some eight or nine miles away from the main facilities at the desert base. It already has made initial flight tests of the XFJ-1, turbo-jet shipboard fighter for the Navy, and the B-45, four-engine jet bomber for the Army. These will be followed by a swept-back wing fighter for the Army, the P-86, and an undesignated advance type ship for the Navy.

### Attention on XS Series

Supersonically, immediate attention will be focused on Bell Aircraft's rocket powered XS-1 and the Navy's transonic test tube, Douglas Aircraft's D-558. The XS-1, packed aloft by a B-29, underwent preliminary tests at Muroc last fall. Whether more exploratory flights may be required before the rocket powered craft is turned loose has not been disclosed, but it seems likely that an altitude test probably will first be essayed because the actual supersonic flight will undoubtedly be made at as high an elevation as is feasible.

After announcing the D-558 Sky-streak, Douglas Aircraft promptly returned the flaming red jet craft back to the shop for engine runs, fuel cali-

bration tests, vibration tests and other finishing touches. Disassembled and trucked to Muroc, the plane is scheduled for its first flight shortly, with Gene May, veteran Douglas test pilot, in the cockpit. The D-558 has extremely short wings and is powered with a General Electric TG-180 axial flow turbo jet engine of approximately 4,000 pounds thrust. Unlike the XS-1, it will take-off under its own power. The conservative Douglas company has been careful to describe the D-558 as a transonic, not a supersonic, plane, but it is significant it has been stressed for the speed of sound.

How far the XS series extends has not been revealed by the Army, which has been tightening up on information regarding experimental projects, but it runs at least to the XS-4, which Northrop Aircraft is building. The XS-2 is Bell's swept-back wing plane and the XS-3 is being built by Douglas.

Like the D-558, Northrop's XS-4 will take off under its own power. Northrop also has a fighter, the XP-89, under development and two models of the giant Flying Wing are being equipped with jet engines. They carry the designation of YB-49 and will have eight TG-180's buried in the wings.

Consolidated Vultee's four-jet bomber, the XB-46, was flown to Muroc earlier this month for a flight test program. It is described as the Army's "fastest" bomber. Consolidated has another jet project, the XP-92, which is being constructed at its Vultee Field division, scheduled now to close down on July 1, but the Army has cancelled out the XB-53, which was to have been built at its Fort Worth plant. The XB-53 was to have had paper-thin, forward-swept wings running back to the tail.

Six-engine jet bombers will join the parade of belching fire pots in Boeing's XB-47 and Martin's XB-48, both of which are scheduled to be ready to fly this spring. Republic has an XP-91 coming along to join its P-84, which almost reached the British speed record last fall; McDonnell Aircraft has a new Navy twin-jet fighter to supplement its F1D and F2D, and Chance Vought has turned to jet in its famous Corsair line. Ryan Aeronautical also has a speedster in the making.

## AOPA Reports Arrangements For Aircraft Financing

The Aircraft Owners and Pilots Association has completed arrangements with 63 independent banks in 24 states and the District of Columbia for financing of aircraft purchases and insurance premiums. For new aircraft, the finance rate is 4% of the unpaid balance, for used postwar aircraft, 5%, and for prewar and War Assets Administration surplus aircraft, 6%.

The period of financing will generally be 12 months, but longer periods may be arranged under certain conditions. Normally, the banks will grant a loan for financing insurable aircraft on the purchaser's signature, with the aircraft as sole security.

## DOUGLAS SKYMASTERS For Sale

Major Airline offers for immediate sale—to principals only—two Douglas C54A's converted to airline luxury-liners by Glenn L. Martin.

This ready-to-fly fleet consists of two C54A's with 1878 gallon fuel capacity and are powered by Pratt & Whitney R-2000-11 Twin Wasp engines.

The two-tone green interior trim of the sound-proofed cabins, the pile carpets, the 44 de luxe reclining seats, and the full buffets of these airline conversions guarantee passenger interest and comfort.

There is also available a large quantity of spare parts, assemblies and spare engines.

**Box No. 564 — AMERICAN AVIATION**

**1317 F Street, N. W. • Washington 4, D. C.**



## American Drops CACD Unit In Merging Cargo Services

### Low Utilization Cause for Closing Contract Division

By DAVID SHAW

American Airlines' Contract Air Cargo Division, an operation set up nearly a year ago to experiment with planeload shipments on a contract basis while the parent company confined itself to development of common carrier freight service, will be discontinued May 31 as a separate operating division of the company.

Although American's decision openly favors the common carrier concept of freight service, it does not imply that CACD was a failure nor that the company intends to discontinue selling planeload charter service on an anywhere, anytime basis. The move is intended to consolidate the two services into a single operating unit, replacing common carrier DC-3's with converted C-54 equipment and stepping up air cargo schedules effective June 2.

In announcing the company's new air cargo program, American's president, Ralph S. Damon, said that planeload service on a charter basis would continue to be offered.

"On the whole, however," Damon stated, "the greatest potential area of expansion for American Airlines is in the field of common carrier air cargo operation, and the company will direct its principal attention to that development."

Key personnel assignments in the new cargo set-up, and plans for disposition of the CACD headquarters in St. Joseph, Mo., were still under discussion at the time American announced its decision to discontinue CACD. The seven converted C-54's which CACD has been using are expected to be absorbed into scheduled cargo service except when needed for special charter operations.

#### Problem of Utilization

Beyond stating that the nature of CACD's operation did not give "as great utilization of equipment as we can expect under the consolidation," American has offered no specific criticism against CACD or against the contract concept of cargo enterprise, nor has the company emphasized expected savings through elimination of duplicated overhead and sales costs.

The problem of utilization is a strong one in any debate on the merits of contract vs. common carrier service. CACD's utilization definitely has been lower than the industry average—five to six hours a day per airplane as

against nine to ten hours for most common carrier passenger services (and close to ten hours for Slick Airways' nonscheduled route-pattern service).

Officials at CACD, and in other planeload contract services which make no attempt to offer a legal simulation of scheduled operation, have contended that a low aircraft utilization figure is not particularly significant since it is offset by load factors which cannot be achieved in common carrier service. In fact, the CACD contract operation assumed a 100% revenue load factor with the shipper chartering the entire plane, whether or not he filled it, and paying a rate which allowed for all deadhead flight incident to picking up the load, delivering it, and getting the plane back to a point where advance arrangements could be made by the operator for picking up another load.

#### Equalled Common Carrier Tonnage

CACD, as a nonscheduled carrier operating apart from the parent company, has not been required to publish figures which would indicate the scope and success of its operations. It has been widely conceded that CACD has operated in the black almost since it started last June, and that in flying something more than 7 million miles, it has carried a volume of tonnage just about equal to that of American's common carrier service. Further evidence of CACD's operating success is not a matter of public record, but it can be assumed that American Airlines will continue to draw a substantial portion of its cargo revenues from planeload charter service.

American's decision in favor of the common carrier concept is serving to bolster the views of many of the country's sounder non-scheduled air freight lines which have concluded that they can remain in business only if granted some sort of common carrier certification. A few other operators, notably Santa Fe and Matson, seem to have shared the CACD philosophy that an anywhere-anytime service is needed for certain shippers and certain commodities. American's new view, however, is that improved system-wide as well as industry-wide common carrier service, coupled with occasional off-route charter services, will provide all the service that shippers are likely to request.

This latter view, if adopted and pushed by a majority of other certificated airlines, could well place a tremendous obstacle in the path of non-scheduled operators who have been able to develop only due to passive

competition put up by most certificated carriers.

Exponents of the strictly contract air cargo theory will claim, as CACD attempted to prove, that certain shipments will always call for a more flexible service than can be offered by a scheduled carrier, or by several carriers on transferred shipments. This applies particularly to cargo consigned to points, U. S. and foreign, off the routes of scheduled carriers; and to special shipments of perishables, livestock, machinery and even manufactured goods which often must move at the shippers convenience under conditions which would make it impractical to load and unload at scheduled times and to make needless stops required by a route certificate.

A certain amount of CACD's business has been in direct competition with American Airlines' common carrier flights. During March, CACD made twice as many flights within the U. S., mostly New York-California, and New York-Chicago-Texas, as were made to points outside the U. S. For purposes of the experiment, CACD offices in New York, Chicago, Los Angeles and San Francisco (with branches in Seattle and Anchorage) in some instances operated in direct sales competition with American's scheduled cargo service. While it can be assumed that certain duplications and competitive features will be eliminated through the consolidation, it has not been announced whether American will have a single cargo sales force, pushing common carrier service and picking up contract business as a sideline, or separate salesmen for the two types of service.

## Ryan Berates Alarm Over Airline Finances

CAB Vice Chairman Oswald Ryan believes that no real basis exists for asserting that a "financial crisis" confronts the airline industry. Speaking in Washington, the Board member declared that the industry "is fundamentally sound today" despite pessimism and "alarm raised in a large section of the press and magazines."

Ryan declared that misinterpretation of a number of factors that are really "firmly keyed in normalcy" lay at the root of the pessimism. Such things as "the half-empty plane, the need for additional capital, and the need for adjusting mail and passenger rates to a level approximating their pre-war level" are really normal, he said. The CAB official declared that "the return of the reduced load factor . . . is a return to normalcy and furnishes no basis for alarm."

Referring to mail pay, Ryan said that in 1941, the industry average mail pay was \$1.73 per ton mile. Wartime peak loads trimmed this figure until during the first 10 months of 1946 it reached a low of 85c per ton mile. He predicted that with a return of normal conditions, the industry average mail pay rate would rise to the neighborhood of \$1.00 per ton mile.

# \$7 Million Loss Reported By Domestic Airlines for 1946

U. S. domestic certificated airlines showed a net loss of \$7,214,000 for 1946, according to official reports filed by the carriers with the Civil Aeronautics Board.

Only eight of the 20 carriers reported net profits for the year, as an aggregate 78% rise in operating expenses more than wiped out the 47% gain in industry operating revenues. Biggest earners were Eastern Air Lines with a \$3,596,000 profit, and United Air Lines with \$1,804,000. Deepest in the red were TWA which indicated a \$8,339,000 loss on its domestic operations, and Pennsylvania Central Airlines which reported a \$2,492,000 deficit.

The \$7 million loss for the domestic carriers compared with a \$17 million profit in 1945, despite increases of 65% in passenger revenues, and 30% in express-freight revenues. Mail revenues dipped 36% from the previous year.

Income from passenger revenues represented 87% of total industry operating revenues for 1946, as against 77% the year before. Despite the new emphasis placed on developing cargo revenues last year, income from express and freight dropped to only 4.1% of total intake. Cargo revenues had constituted slightly more than 5% of industry income for the two preceding years.

The percentage received from mail services continued its downward trend and last year totaled only 6.6% of industry income, compared with approximately 15% in 1945 and 20% in 1944.

Summary of each carrier's revenues and expenses for 1946 is given in the table below. Variance of profit figures shown here with those in reports to company stockholders is explained by CAB as due to differences in accounting practices and bookkeeping adjustments.

## Southwest Airways Shows Good Progress In Feeder Operation

With a load factor of 53.3% for the first week of April, Southwest Airways is showing substantial improvement as a feeder airline operation and its management hopes to be "over the hump" in a very short time.

Leland Hayward, president of the California-Oregon feeder network, said he is confident of the following facts:

"1. We can see daylight on getting our costs down substantially under a dollar a mile in the appreciable future.

"2. There is a very definite acceptance on the part of the public for this service.

"3. We can make as many stops as we are making and still retain a faster ground time than anyone thought we could. We are actually getting in and out of these stations as fast as we claimed we would. In fact, we have found that we have a tremendous amount of holding time at stations due to being ahead of schedule at times."

Southwest's sharp upturn in traffic

is reflected in the following table:

	No. of Passengers	Load Factor
January .....	1,692	26.03
February .....	2,165	28.64
Mar. 1-Mar. 15 .....	1,543	30.81
Mar. 15-Apr. 1 .....	2,562	41.30
Apr. 1-Apr. 7 .....	1,623	53.54

"The most important thing in connection with these figures," Hayward said, "is the indication that the public has accepted this type of operation.

"Our increase in scheduling in May will give us much better utilization of the aircraft and will help us lick our costs, which at the present time are way out of line. There is no way they can become reasonable until we fly more miles.

"We are trying very hard to get some figures on how much of our business is true feeder and how much of it is on-line business. We know several things about this. One is that our feeder business is increasing each month and the other is that we are turning over to trunk carriers a lot more business than they are turning back to us.

"This is not due to any lack of interest on their part, but largely due to the education necessary so that the other carriers can know there is air service to the towns we service. This is a gradual process. We are working very hard with travel agencies and trying to spread this information. We are also in process of working out joint fares with other carriers, which will help. The large carriers (United, American, TWA and Western) have been extraordinarily cooperative."

### Headquarters for Air Cargo, Inc.

General headquarters for Air Cargo, Inc., ground and terminal service organization of the scheduled airlines, have been set up in the Barr Building, 912 17th St., NW, Washington, D. C.

## Summary of Domestic Airline Revenues--Expenses for 1946\*

(Compiled by American Aviation Publications from Official CAB Reports)

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	OPERATING REV. PER NET MILE	OPERATING EXP. PER NET MILE	NET INCOME BEFORE TAX	NET PROFIT OR LOSS	TOTAL ASSETS
All American	737,177	713,636	8,233		857,054	430,188	426,863	42.1¢	48.9¢	-159,112	-170,833	2,298,506	
American	68,083,434	58,716,805	3,269,052	2,083,366	1,890,603	68,401,749	26,381,693	42,020,053	106.3¢	106.8¢	-1,519,323	-252,467	128,053,527
Boeing	10,506,495	9,526,028	421,816	243,954	68,356	10,682,411	4,390,136	6,286,271	89.9¢	91.4¢	99,100	94,152	10,141,046
Caribbean	333,603	311,296	15,589	3,046	8,157	491,868	232,099	279,767	94.3¢	117.9¢	-126,945	-126,545	381,595
C & S	8,085,195	6,639,916	1,143,206	200,253	17,784	9,221,021	3,709,295	5,511,726	99.7¢	113.7¢	-1,153,717	-916,506	7,496,570
Colonial	3,394,886	2,690,494	533,086	28,180	3,796,936	1,575,773	2,221,160	101.9¢	115.3¢	-140,059	-375,499	3,227,272	
Continental	4,457,427	3,718,740	613,556	28,729	21,200	4,954,800	1,874,621	2,680,179	82.1¢	83.9¢	26,145	34,666	2,718,066
Delta	10,908,598	9,696,632	455,847	185,749	39,878	10,690,896	4,672,589	5,978,303	94.8¢	96.0¢	-180,882	-110,463	6,025,532
Eastern	41,637,289	38,028,420	1,404,668	1,410,312	86,495	33,415,413	14,914,468	18,500,941	100.7¢	80.9¢	7,431,570	3,596,570	36,832,638
Hawaiian	2,894,617	2,394,296	13,308	108,300	217,267	2,941,694	1,025,945	1,516,107	144.4¢	126.8¢	330,602	188,223	2,061,333
Inland	1,723,728	1,097,666	593,529	8,661	1,703	1,782,205	811,869	970,333	87.0¢	89.9¢	-60,773	-41,776	579,141
MCA	4,672,124	3,811,966	945,366	57,267	21,000	4,446,429	1,953,158	2,493,268	92.3¢	84.2¢	118,725	238,334	2,769,489
National	9,306,499	8,485,708	406,926	103,696	16,427	9,334,141	3,845,141	4,489,268	101.9¢	91.2¢	1,093,317	753,183	8,452,186
Northwest	5,568,393	4,296,115	1,027,413	99,867	5,332,080	2,410,909	2,921,168	128.5¢	127.6¢	205,193	110,193	4,120,100	
Northwest	19,394,946	17,445,907	1,201,156	510,445	11,178	19,413,788	7,839,761	11,573,987	103.8¢	104.1¢	-214,223	-46,770	19,181,715
PCA	17,867,218	16,590,215	388,462	554,631	154,084	20,800,240	8,436,886	12,363,354	100.9¢	117.6¢	-3,131,110	-2,492,720	21,444,463
Pioneer	636,826	266,594	336,369	2,673	811,855	373,363	436,489	65.1¢	83.0¢	-259,328	-259,328	1,144,130	
TWA	40,386,280	34,794,293	2,322,421	1,493,292	98,719	40,062,178	18,766,169	21,296,009	96.5¢	122.0¢	-11,325,793	-8,339,413	67,816,763
United	55,990,094	47,633,678	4,344,907	2,037,644	1,133,079	54,973,692	20,917,596	34,056,094	102.3¢	100.9¢	2,738,086	1,804,068	95,075,411
Western	10,179,986	9,358,134	368,146	175,324	56,623	11,290,637	4,954,092	6,336,542	118.2¢	131.1¢	-1,160,500	-901,462	13,121,979
TOTALS	316,305,175	275,769,723	21,139,494	9,308,182	4,309,993	321,861,278	129,501,311	192,359,922	100.0¢	101.8¢	-7,458,647	-7,214,343	392,979,842

\* These figures reflect adjustments made by the carriers after the original monthly reports were filed with CAB.

\*\* As of December 31, 1946.

## Young Again Dissents From Costly CAB Feederline Policy

At least one Civil Aeronautics Board member—Col. Clarence M. Young—is unlikely to vote to set up any new feederlines unless experimental routes are assigned to some established trunk line operator. Col. Young made this view plain in a concurring and dissenting opinion he wrote in the Southeastern States Case decision.

Recalling what he had said last year in a dissent on the Texas-Oklahoma Case decision (AMERICAN AVIATION, Dec. 15, 1946), Young reminded the Board that it still had not tried out his suggestion that an existing trunk-line carrier be allowed to try to operate a truly local-type service.

He objected strongly to the action of the majority of the Board in handing out more than 3000 new route miles to two new companies in the Southeast, stating that this was "neither necessary nor desirable in the further development of the 'feeder line' experimental program." Young claimed that by opening the door to the two new firms, CAB had thrown away a good chance to let an existing airline try its hand at local operations. He added that most of the communities certificated by the majority would have received more effective and satisfactory service from a trunk-line carrier.

Col. Young warned that by failing to try out a trunk line carrier for local service, and by giving birth to two new companies, CAB had gone "beyond the limits of genuine experimentation and in the direction of establishing a system of local services on a national basis without waiting for an admittedly experimental program to be proved." He said the two routes just added on an experimental basis would cost the Government about \$1,500,000 each year.

The dissenting member thought the best local service could be worked out by certificating a "sufficient number" of additional communities on a going trunk route, requiring the carrier to set up local schedules especially to serve them.

## CAB Calendar

May 1—Hearing on non-certificated operations of Universal Airlines, Inc. (Docket 2638). Examiner Richard A. Walsh. Tentative.

May 5—Hearing on applications proposing local service in Western Washington (Docket 2368 et al.). Tentative. Examiner James E. Kelth.

May 5—Hearing on joint application of Western and United for approval of sale of Route 68 plus aircraft and equipment to UAL. (Docket 2839). Examiner Thomas L. Wrenn.

May 12—Oral argument in the Detroit-Washington Service Case. (Docket 679 et al.) 10 a. m., e.s.t., Room 5042, Commerce Building.

June 16—Hearing on the Minot-Regina, Sask., Application of Mid-Continent Airlines. (Docket 628). Examiner Lawrence J. Koster. Tentative.

May 1, 1947

## GLOBE-GIRDLING ROUTES OF PAN AMERICAN AIRWAYS, INC.

Exceed by 19,000 Miles the Total Domestic Routes of All 26 U. S. Airlines.



**Comparison**—Here is one of the series of three-colored charts prepared by American Airlines to show graphically the comparative size and growth of Pan American Airways. The charts accompany AA's brief in the Pan Am domestic route case. The chart above, indicates that Pan Am's international routes exceed the total of all U. S. domestic routes by 19,000 miles, not including mileages of Pan Am's foreign affiliates.

## Airlines Re-Assert Opposition to Expansion Of Pan American into Domestic Operations

Sharp opposition to any domestic routes for Pan American Airways was re-stated with added emphasis as airline lawyers filed briefs on the PAA Domestic Routes Case with CAB Examiner William J. Madden. Pan Am's only support came from a number of cities who asked the Board to give the big international carrier U. S. routes linking its 13 terminals.

American Airlines' brief charged that "disastrous dissipation of the traffic and unbalancing of the air transportation system" would result if the Board granted PAA the more than 12,000 miles of domestic routes it wants. The brief said that despite a worldwide system of more than 95,000 route miles, PAA now wants to tap "the very richest cream of the domestic market, that which can be served at least cost and from which maximum revenue can be realized." American's lawyers charged that PAA had completely failed to prove that the domestic routes were required by the public convenience and necessity.

Accompanying the brief were a number of three-colored charts, showing graphically how large PAA now is and how its growth was accomplished. The charts stress that PAA is already far larger than all existing domestic airlines combined.

Transcontinental & Western Air claimed that domestic routes for PAA would be "a colossal gamble" on the basis of Pan American's estimates of future domestic airline traffic. If these estimates shouldn't pan out, TWA said,

"the entire domestic route pattern would be ruined by what Pan American proposes," TWA said that Pan American's own traffic estimates predict a diversion of 26 million dollars in annual revenue from TWA alone.

United Air Lines also stood in the ranks of the opponents. Its brief declared that if PAA is successful in its application, it "would come out in one fell swoop with a domestic system larger than that of any other existing carrier. The result of years of effort by numerous carriers, through good years and bad, would be duplicated with the stroke of a pen."

The UAL brief characterized PAA's proposal as "striking at the very heart of the systems which have been and are the backbone of the domestic route structure."

Pan American itself argued that America's position on world air routes is in danger of decline unless PAA gets domestic routes linking its terminals. Without domestic routes, PAA claims that it will lack the strength of its competitors, and will probably need large subsidies. PAA said that it could provide needed non-stop long-haul domestic services of "a type superior to anything which the domestic airlines have furnished."

PAA also accused American Airlines of "stymying" the production program of the Republic Rainbow by cancelling its order for these planes last February. Pan Am had based much of its case on Rainbow performance figures.





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1060

# CAB Awards 3,000 Feeder Miles in Southeast Area

More than 3,000 miles of new routes were added to the nation's secondary air transport map by the Civil Aeronautics Board's Southeastern States Case decision last month. The feeder mileage was awarded to two new companies—Southern Airways, Inc., of Birmingham, Ala., and Piedmont Aviation, Inc., of Winston-Salem, N. C.

Southern Airways received authorization for 1,500 miles of routes lying within a large triangle bounded by Memphis on the west, Jacksonville to the south, and Charlotte, N. C., to the north. (See map below). Frank W. Hulse is president of the company. Hulse also heads a number of affiliated corporations engaged in flight instruction and fixed base activities.

Piedmont Aviation was selected to operate, 1625 miles of routes extending westward from Washington, Norfolk, and Wilmington, N. C., to Asheville, N. C., Louisville, Ky., and Cincinnati, Ohio. Thomas H. Davis heads the airline. The company has had a fixed base operation at Winston-Salem since 1940.

Final certificates will not be given to the two new lines until they can show that airports along the projected routes are adequate to permit a reasonable amount of service. Both certificates will be good for three years when they are issued. The Board denied Piedmont's application for an airmail pick-up route.

## Trunk Line Changes

The decision also made a number of changes in the routes of trunk line carriers in the Southeastern area.

American Airlines received Richmond, Va., as a new stop on Route 4 between Washington and Lynchburg, Va.

To Delta Air Lines Route 24 were added Selma and Montgomery, Ala., and Columbus, Ga., as intermediate stops alternate to Birmingham, Ala. Macon, Ga., was named an alternate to Augusta on the same route. Chattanooga, Tenn., was added to Delta's Route 54 as an alternate to Knoxville, Tenn.

One of the biggest new route grants

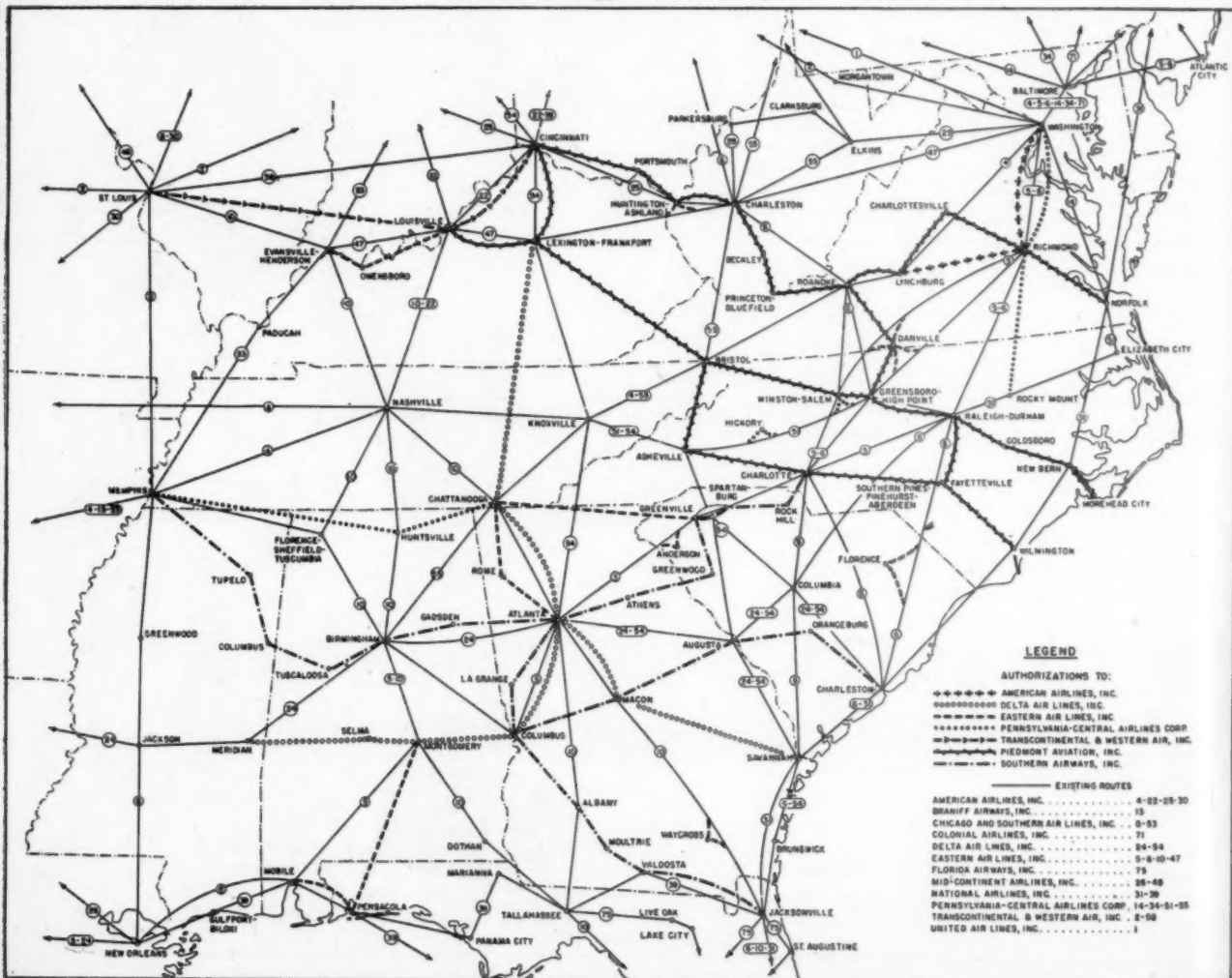
in the decision went to Pennsylvania-Central Airlines. Its Route 51 was extended from Rocky Mount, N. C., to Washington via Richmond, and from Knoxville to Memphis via Chattanooga and Huntsville, Ala. Winston-Salem and Hickory, N. C., were named as intermediate stops on Route 51.

Eastern Air Lines' Route 5 was extended from Greenville, S. C. to Chattanooga and Pensacola. Anderson, S. C., and Danville, Va., were made new intermediate stops on the route. Florence, S. C., was added to EAL's Route 6. Eastern's Route 10 picked up Waycross, Ga., Rome, Ga., and Huntsville, Ala., as new intermediates, the latter as an alternate to Florence-Sheffield-Tusculumbia, Ala. Owensboro, Ky., and the joint point Ashland, Ky.-Huntington, W. Va., were added to Eastern's Route 47.

Transcontinental & Western Air was allowed to stop at Louisville between St. Louis and Cincinnati on its Route 58.

## Van Dusen Resigns from PAA

William I. Van Dusen, for many years director of public relations for Pan American Airways, has resigned and is opening his own public relations office in New York. PAA will be one of his clients.



## Airline Personnel

### Administrative

Robert J. Wilson, Capital Airlines' v. p.-legal, has been given the added title of v. p.-properties and personnel administration, and henceforth will have charge of these phases of operation along with his legal duties. Wilson announced that the following key men on his staff would assume new titles and responsibilities: S. T. McAllister becomes director of properties; J. W. Burke is director of personnel, and W. T. Grasty is assistant to the v. p.-properties and personnel administration.



Grayson

Herrnstein

Hal A. Grayson, associated with the news bureau of TWA for six years, has joined Mid-Continent Airlines as director of public relations.

Robert H. Herrnstein has been appointed director of economic development and budgetary control for Northeast Airlines. Herrnstein, who joined NEA in 1941, was formerly director of economic development.

Jess B. Bennett, who served five years in the AAF before joining Braniff Airways last year, has been named assistant to the president with headquarters in Washington. D. C. Bennett will continue to handle international duties preparatory to company's inauguration of service to Latin America.

Jay Crum, American Airlines public relations representative at Tulsa, Okla., has been transferred to the southern regional office at Dallas, as assistant to the southern regional director of public relations, Sam Pace.

### Traffic and Sales

Frederick G. Neuberth, Jr., formerly senior traffic representative for TWA in New York, has been appointed district traffic manager in Washington. He succeeds William R. Bulough who leaves TWA for Rufus H. Darby Printing Co.

Fred R. Clemens, with Capital Airlines since 1931, has been named district sales manager at Grand Rapids, Mich.

Jeff Lewis, with American Airlines' reservations and ticket office in Washington since 1939, has been designated manager of the company's Washington city ticket offices at the Statler Hotel.

Shawn Mahoney, previously with TWA, Thomas Cook & Sons, and the American Express Co., has joined SABENA Belgian Airlines in New York and will serve as assistant to Fernand J. Martens, special representative for North America.

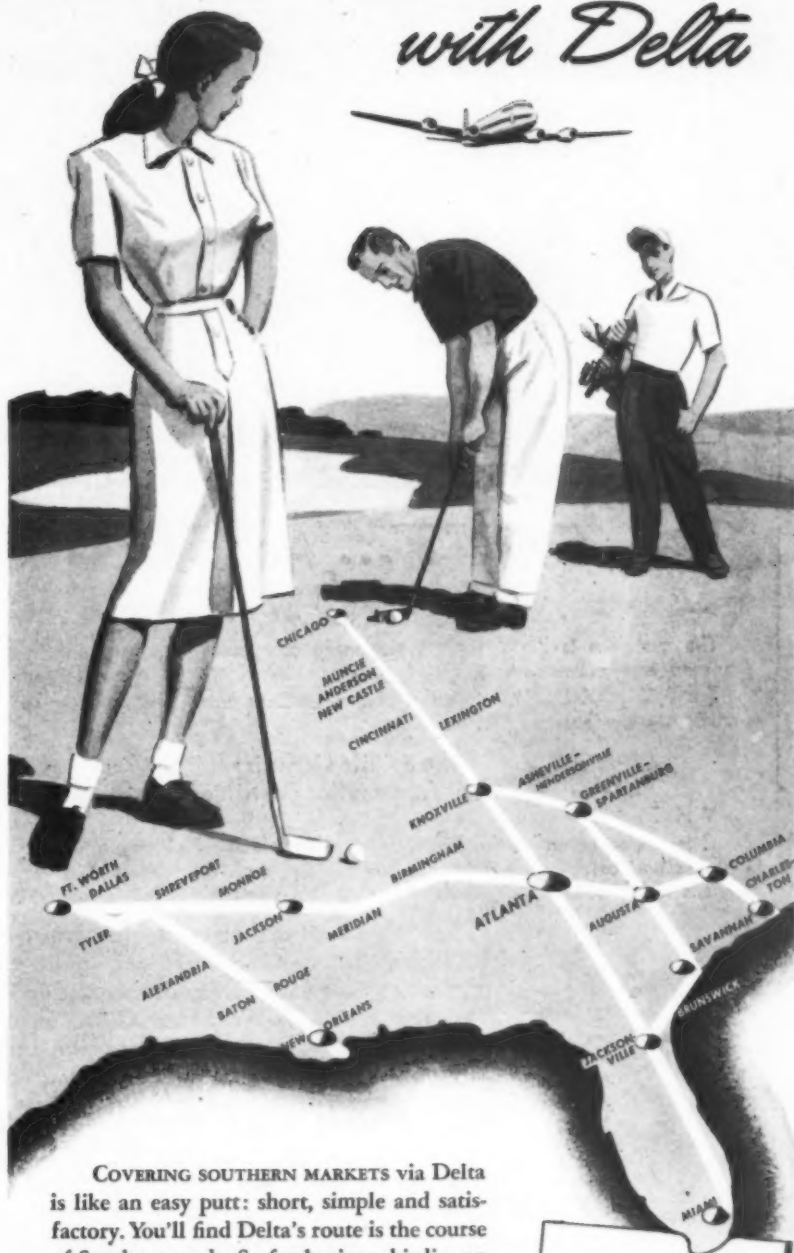
F. Paul Miscione, formerly in the traffic department of Pan American Airways' Atlantic Division, has been appointed director of passenger traffic for Peruvian International Airways.

### Heads TWA Medical Program

Dr. W. R. Lovelace, II, widely-known authority on aviation medicine, has been appointed director of TWA's medical program, which will be coordinated through the company's medical centers in New York and Kansas City.

May 1, 1947

## Cover the South in Par with Delta



COVERING SOUTHERN MARKETS via Delta is like an easy putt: short, simple and satisfactory. You'll find Delta's route is the course of Southern trade. So for business birdies on your trips to and through the South, plan to travel with Delta.

*P.S. Bring your golf clubs.*

# Delta

AIR LINES

General Offices: ATLANTA, GA.

For Reservations Call Your Travel Agent or Airlines Ticket Office

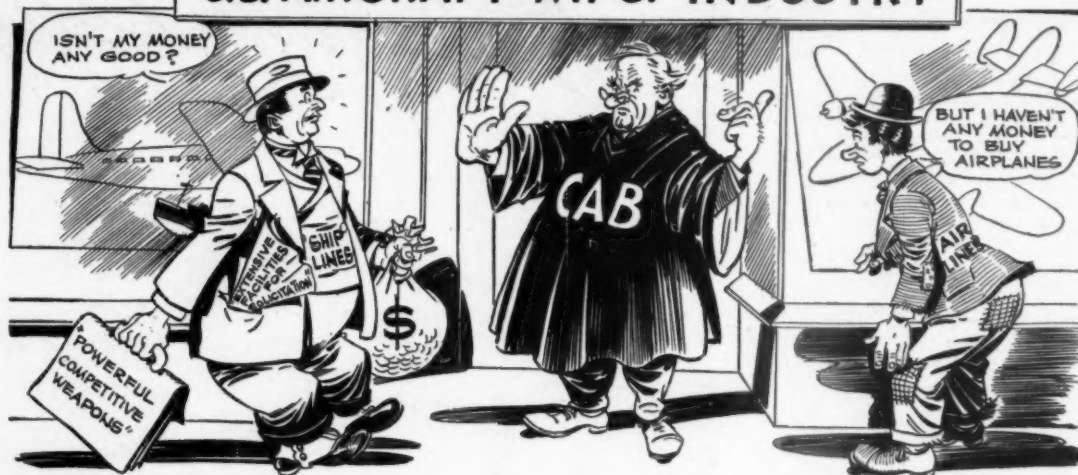
FROM CHICAGO: DC-4 express flights to Cincinnati and Atlanta, non-stop to Miami.

FROM CINCINNATI: DC-4 express flights South and from Atlanta across the South.

FROM MINNEAPOLIS, MILWAUKEE, DETROIT, TOLEDO, COLUMBUS, DAYTON: Convenient connections at Chicago or Cincinnati.



## U.S. AIRCRAFT MFG. INDUSTRY



## LOST... A \$50,000,000 CUSTOMER!

The customer is the American steamship companies who want to fly the foreign trade routes which they have pioneered and developed.

**\$50,000,000** is what the steamship lines were prepared to spend on aircraft and equipment to start operations over these routes.

The aviation industry lost this cash customer when the Civil Aeronautics Board denied the shipline applications.

### WHY?

One reason given by the Board in its recent decision on steamship eligibility reads "by reason of their superior resources and extensive facilities for solicitations, such carriers would often be the possessors of powerful competitive weapons which could enable them to crush the competition of independent air carriers."

But the Board expresses not the faintest alarm over the fact it has granted this right to fly to FOREIGN airlines controlled by FOREIGN steamship interests who have the same "POWERFUL COMPETITIVE WEAPONS", and who are now using them aggressively to the detriment of both our airlines and our shiplines.

## U.S. Ships Also Must Have Wings In Order to:

1. Protect and expand our foreign commerce which provides TEN BILLIONS OF DOLLARS OF OUR NATIONAL INCOME and steady jobs for 3,500,000 Americans.
2. BUILD A STRONG, MODERN MERCHANT MARINE WHICH TODAY MUST FLY AS WELL AS SAIL.
3. CREATE NEW MARKETS FOR OUR ORDER-HUNGRY AVIATION INDUSTRY.



## THE SEA-AIR COMMITTEE

American President Lines, Ltd. American South African Lines, Inc. Atlantic, Gulf & West Indies SS Lines.  
Grace Line, Inc. Matson Navigation Co. Moore-McCormack Lines, Inc. Oceanic Steamship Co.  
Seas Shipping Co. United Fruit Co. United States Lines Co. Waterman Steamship Corp.  
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## NEW SERVICES

American Overseas Airlines expects to inaugurate the first scheduled air service between this country and Finland in early May. Permission to operate this service was granted to AOA by the Government of Finland on a temporary basis, pending conclusion of a bilateral agreement between the two countries.

Trans World Airlines will add seven extra sections to its trans-Atlantic schedules over the next two months to take care of a greatly increased demand for air travel to Europe and the Middle East. With eastbound passenger and air express loads already trebling what they were in January and with many flights beginning to be booked almost solid until fall, Charles L. Gallo, director of traffic for TWA's international division, said the present structure of 12 weekly eastbound trans-Atlantic flights had to be increased to handle the traffic. He estimated TWA will carry nearly 25,000 passengers abroad in 1947.

Mid-Continent Airlines increased its scheduled route miles by 18% on April 15 by inaugurating service on a route between Sioux City, Des Moines and St. Louis. Additional service over the new route is available on Mid-Continent's northbound flight No. 72 and southbound flight No. 71. A new round-trip service between Minneapolis-St. Paul, Kansas City and New Orleans is also offered. Supplementing these schedule changes is a new non-stop flight from the Twin Cities to Omaha, and one-stop service on the same flight to Kansas City.

Pan American Airways has readjusted its schedules to establish new overnight service between New York and Caracas, via Puerto Rico, the Dominican Republic and Curacao.

American Airlines, certificated in the Southeastern States Case to include Richmond as an intermediate stop between Washington and Lynchburg on its Route 4, plans to inaugurate service to the Virginia capital about July 1.

TWA expects to acquire four Constellation 49 models from Lockheed Aircraft Corp. about June 1, and shortly thereafter to put them into service on two new transcontinental schedules.

# Airline Commentary

By ERIC BRAMLEY

YOU MAY know that reversible pitch propellers enable an airplane to back up (on the ground, that is) . . . This development is not yet too widely known, however, and Rex Werner, TWA's art director, tells the story of the pilot who landed at an unsuspecting airport in a plane equipped with these propellers . . . Becoming involved in taxiing difficulties, he called the tower and asked permission to back up . . . There was a long pause . . . Then a skeptical voice on the radio said: "Any airplane on this field that can back up is hereby granted permission to do so" . . .

Capital Airlines' company publication has an editorial entitled "Let's Talk Adult" . . . A passenger checked in recently at a Capital counter . . . He was going to Detroit . . . Said the reservationist: "Do you want a limo when you get to Detroit?" . . . The passenger wasn't sure he understood, but after pondering a moment he said: "Oh, you mean do I want a limousine from the Detroit airport to town?" . . . Whereupon the reservationist exclaimed, "Natch!" . . . The passenger said he didn't have a very high regard for the reservationist or for a company that doesn't attempt to teach its employees basic English . . . Says the editorial: "Let's not succumb to bobby-sox talk in handling our passengers" . . . With which we agree 100% . . .

We are honored, deeply honored, by a letter from Mr. H. L. Baldwin, publicity director for the Boston & Maine Railroad . . . You may have read in this column several uncomplimentary remarks about the dear old B&M's anti-airline advertising, and particularly about the "Time Table Mable" singing commercial which the company is using . . . Here is the full text of Mr. Baldwin's letter:

"We note in your column of Apr. 1 that you are still very much interested in our advertising. Your comments, which we have read before many service clubs and other organizations, have proven very helpful to us and we appreciate them. The Time Table Mable advertisement was run in all the daily and weekly newspapers in northern New England. The singing commercial which it introduced is running for about 18 weeks, several times each day on all the principal large and small radio stations in our territory. Perhaps you'd like to tell your readers that Time Table Mable has proven so popular that we have already distributed more than 300 copies of the record—suitable for use on any home recording producer—to those who have written us asking for a copy and that more copies are now being processed. Its theme of 'it gets me where I want to be; through rain or fog I'm worry free' and 'whatever the weather it goes right to town' has and is continuing to prove a most popular refrain. If you'd like to become more familiar with it so that you could describe it more fully in your column, we would be glad to send you a pressing on request. Again thanks for your comments and we hope you'll have more of them" . . . We certainly thank you, Mr. Baldwin, for this progress report . . . And your remarks will spur us to greater efforts . . . Don't bother with the recording . . . We will struggle along without it . . .

## Summary of Domestic Airline Revenues--Expenses for Dec., 1946

(Compiled by American Aviation Publications from Official CAB Reports)

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	OPERATING REV. PER REV. MILE	OPERATING EXP. PER REV. MILE	NET INCOME BEFORE INCOME TAX	NET PROFIT OR LOSS	TOTAL ASSETS
All American	59,126	57,273	1,694	75,487	39,955	35,531	41.9¢	53.5¢	-46,370	-46,370	2,298,506		
American	6,307,069	4,365,186	371,081	319,290	290,181	7,823,618	2,914,348	4,909,269	105.8¢	131.3¢	-1,301,606	-612,047	128,053,527
Boeing	96,510	829,027	46,891	44,533	10,380	881,343	34,717	534,165	88.5¢	80.8¢	84,888	90,184	10,141,046
Continental	36,102	29,505	1,341	1,389	40,214	18,120	22,094	102.5¢	114.1¢	-5,499	-5,499	381,595	
C & S	1,497,432	448,388	946,209	31,033	8,300	914,992	336,830	578,162	222.7¢	135.8¢	580,160	580,160	7,456,870
Colonial	591,413	172,349	410,683	5,777	391,572	166,555	245,016	235.9¢	156.2¢	196,391	194,391	3,227,272	
Continental	325,048	253,220	53,915	4,905	4,094	364,993	149,530	215,463	78.1¢	87.8¢	13,566	3,368	2,718,066
Delta	1,116,378	1,009,188	46,758	34,072	12,718	1,109,667	519,834	589,833	105.2¢	105.6¢	2,293	1,421	6,023,832
Eastern	4,503,512	4,009,262	147,392	246,115	24,795	3,749,594	1,749,438	2,000,155	110.6¢	92.1¢	-209,185	-673,185	36,832,628
Hawaiian	268,564	211,911	2,646	10,835	26,601	374,859	143,140	231,719	126.2¢	176.1¢	-131,079	-273,457	2,061,933
Inland	137,127	83,658	50,760	888	281	167,106	70,735	96,731	88.6¢	107.9¢	-29,983	-20,823	579,181
NA	412,336	324,148	75,948	7,420	421,391	182,737	238,654	83.8¢	85.6¢	-9,277	-5,195	2,769,459	
National	932,673	842,277	42,774	12,422	9,498	896,933	415,691	481,241	107.2¢	103.1¢	30,670	19,015	8,452,186
Northeast	935,723	309,158	609,464	8,756	5,585	940,240	274,382	311,058	239.6¢	149.9¢	459,871	364,871	4,120,100
Northwest	1,523,657	1,228,491	148,839	130,661	6,695	2,226,096	815,474	1,410,581	94.2¢	137.6¢	-771,813	-471,536	19,181,715
PCA	1,251,287	1,028,567	41,396	110,443	48,589	1,729,172	868,665	860,507	85.4¢	118.1¢	-805,350	-787,350	21,464,463
Pioneer	170,340	26,027	131,830	440	95,411	421,391	141,249	54,261	206.4¢	115.6¢	33,694	1,243,130	
TWA	3,325,423	2,669,845	291,665	229,698	93,283	4,127,822	1,758,257	2,369,564	96.9¢	120.7¢	-1,762,416	-1,762,416	67,816,743
United	4,247,940	3,257,946	433,080	294,813	206,800	5,402,972	1,834,980	3,567,991	93.7¢	119.2¢	-1,070,007	-984,007	55,075,411
Western	853,625	732,935	49,291	27,924	10,760	1,322,924	621,829	701,255	119.1¢	188.6¢	-561,233	-498,663	13,123,979
TOTALS	29,449,891	22,471,058	3,958,742	1,525,719	754,184	32,731,596	13,278,336	19,453,260	106.2¢	118.0¢	-5,322,285	-4,513,444	392,979,842

# Airline Salaries, Stockholdings Reported for 1946

American Overseas Airlines, Eastern, TWA, Colonial, Northwest, Chicago and Southern, and Capital Airlines (PCA) have recently filed reports of 1946 salaries and stockholdings with the Civil Aeronautics Board, giving the following information:

## American Overseas Airlines

	Salary	Shares Capital
J. E. Slater, chmn. of board	\$25,000	337
C. R. Smith, pres.	2,002	2,002
H. R. Harris, v. p. & gen. mgr.	30,000	1,100
J. M. Eaton, v. p.	15,000	500
J. G. Flynn, Jr., v. p.	15,000	1,120
J. S. Robbins, v. p.	15,750	1,000
Wm. Littlewood, v. p.	200	500
R. E. S. Deichler, v. p.	500	20
C. W. Jacob, v. p.	10,000	200
J. C. Gardiner, Jr., secy.-treas.	6,708	700
R. G. Rose, ass't treas.	9,000	5,561
H. D. Starr, ass't secy.		
K. Murdoch, ass't secy. & ch. training analyst		
<b>Directors:</b>		
W. H. Coverdale	12,000	50
R. S. Damon	500	1,100
R. E. S. Deichler	20	337
H. R. Harris	2,002	
C. W. Jacob		
J. E. Slater		
C. R. Smith		
holders of more than 5% of stock:		
American Export Lines	355,708 or 20.3%	
American Airlines, Inc.	1,081,354 or 61.8%	

## Eastern Air Lines

	Salary	Shares Common
E. V. Rickenbacker, pres.	\$35,000	100,000
P. H. Brattain, 1st v. p.	20,000	19,000
S. L. Shannon, 2nd v. p.	17,500	8,000
L. P. Arnold, v. p.	12,000	2,600
C. W. France, v. p.	11,875	none
M. M. Frost, v. p.	17,500	300
Stanley de J. Osborne, v. p.	21,250	40
T. F. Armstrong, secy.-treas.	12,000	3,008
J. W. Moore, ass't secy.-ass't treas.	9,000	1,500
<b>Directors:</b>		
T. F. Armstrong	3,008	19,000
P. H. Brattain	800	2,800
Everett R. Cook	4,000	1,500
Paul M. Davis	400	280
George B. Howell	100,000	38,800
J. W. Moore	8,000	
W. L. Moore		
Stuyvesant Peabody, Jr.		
E. V. Rickenbacker		
Laurence S. Rockefeller		
S. L. Shannon		
No holders of more than 5% stock.		

## TWA

	Salary	Shares Common
T. B. Wilson, chmn. of board	\$39,333	100
Jack Frye, pres.	43,310	2,287
Paul E. Richter, exec. v. p.	32,635	219
E. Lee Talman, v. p.-administrative	27,102	none
John A. Collings, v. p.-transportation	21,368	1
Otis F. Bryan, v. p.-int'l division	19,470	109
E. O. Cooke, v. p.-traffic	13,000	125
J. C. Franklin, v. p.-engineering	18,107	none
H. B. Miller, v. p.-public relations	7,675	none
C. E. Fleming, v. p.-regulatory procedures	12,301	51
A. R. Wilson, v. p.	18,333	none
B. F. Giles, v. p.	12,150	none
John M. Lockhart, treasurer	14,700	none
A. M. Jens, Jr., secretary	8,970	none
Dallas Blair-Smith, ass't treas.	10,000	none
C. A. Gress, ass't treas. & ass't secy.	9,200	104
M. W. McQueen, ass't treas.	8,336	165
Myra E. Black, ass't secy.	3,670	none
Margaret L. Ewell, ass't secy.	3,996	none
C. W. Herre, ass't secy.	6,000	2
Carter L. Burgess, ass't secy.	6,206	none
<b>Directors:</b>		
LaMotte T. Cohu	100	1
John A. Collings	100	2,287
Powell Croesley, Jr.	100	100
Jack Frye	100	100
Sidney Maestre	100	100
Warren Lee Pierson	100	100
Paul E. Richter	100	100
Gilbert H. Scribner	100	100
N. S. Talbot	100	100
E. Lee Talman	100	100
T. B. Wilson	100	100
holders of more than 5% stock:		
Tool Co.	435,050 or 44.13%	

## Colonial Airlines

	Salary	Shares Capital
Sigmund Janas, pres.	\$18,000	41,238
Edward S. Ridley, v. p.	10,000	300
Branch T. Dykes, v. p.-operations	12,000	554
Alfred M. Hudson, v. p.-traffic	8,700	1,400
William J. Byrne, treas.	6,666	85
K. Hamilton, secy.	6,000	1,110
<b>Directors:</b>		
Sigmund Janas	41,238	3,500
Carl O. Hoffman	11,604	554
Francis Hartley, Jr.	1,000	500
Branch T. Dykes		
William M. Boyle		
Karl H. Bissell		
holders of more than 5% of stock:		
Sigmund Janas	41,238 (beneficial ownership) or 11%.	

## Northwest Airlines

	Salary	Shares Common
Croll Hunter, pres.	\$16,500	9,100
E. I. Whyatt, exec. v. p.	22,250	3,442
Linus C. Glotzbach, v. p. & asst. to pres.	15,700	400
W. Fiske Marshall, v. p.-operations	18,000	100
K. R. Ferguson, v. p. eng. & planning	18,000	1,150
R. O. Bullwinkel, v. p.-traffic	13,500	150
A. E. Ploan, v. p. secy., & gen. counsel	15,700	600
L. S. Holstad, treas.	13,500	300
R. L. Smith, eastern region v. p.	14,100	150
F. C. Judd, western region v. p.	14,100	400
D. J. Kling, Orient region v. p.	12,187	796
<b>Directors:</b>		
W. T. Gardiner	200	1,575
R. H. Hardy	9,100	
Croll Hunter	900	1,000
T. E. Irvine	38,175	1,580
J. T. Johnson	600	3,442
L. M. Leffingwell		
Alonso Petteys		
William Stern		
Edwin White		
E. I. Whyatt		
The airline reports no holders of more than 5% stock.		

## Chicago and Southern

	Salary	Shares Common
Carleton Putnam, pres.	\$23,312	54,800
Sidney A. Stewart, exec. v. p.	6,968	400
Albert J. Earling, v. p.	13,375	1,025
Bruce E. Braun, v. p.*	10,100	
Richard S. Maurer, secy.	9,250	907
Junius H. Cooper, treas.	3,750	100
Erma Murray, ass't secy.	4,500	25
Robert S. Scrivener, ass't treas.	4,980	201
* Inactive since Sept. 1, 1946. Resignation accepted by bd. of directors, effective Feb. 20, 1947.		
† 20 shares held jointly with wife.		
‡ Held jointly.		
<b>Directors:</b>		
Carleton Putnam	54,800	
Bruce E. Braun	1,025	
Albert J. Earling	1,000	
L. E. Billett	1,000	
W. Harry Johnson		
holders of more than 5% of stock:		
Carleton Putnam	54,800 or 10.8%	
I. M. Simon & Co.	30,121 or 5.9%	
St. Louis, Mo.		

## Capital Airlines

	Salary	Shares Common	Common Op-tions
C. Bedell Monroe, pres.	\$34,999	1,828	10,000
J. H. Carmichael, exec. v. p.	25,000	437	2,188
Robert J. Wilson, v. p.	18,000	336	1,564
Fred M. Glass, v. p.	10,331		
R. G. Lochiel, v. p. & treas.	21,000	935	2,275
Hayes Dever, secy.	10,000	100	850
<b>Directors:</b>			
J. H. Carmichael	437		
H. B. Clark	200		
Armand G. Erpf	100		
Robert V. Fleming	10		
David L. Fawley	20		
George R. Hann	7,733*		
Lorenz Iversen	3,800		
C. Bedell Monroe	1,828		
No holders of more than 5% stock.			

\* Plus 236,000 3 1/2% convertible debentures.

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- ★ THE TUTWILER Birmingham, Ala.
- ★ THE JEFFERSON DAVIS Montgomery, Ala.
- ★ THE ST. CHARLES New Orleans, La.
- ★ THE SAVANNAH Savannah, Ga.
- ★ THE KENTUCKY Louisville, Ky.
- ★ THE ANDREW JACKSON Nashville, Tenn.
- ★ THE O. HENRY Greensboro, N. C.

DINKLER HOTELS

Carling Dinkler, President  
Carling Dinkler Jr., Vice President



## Easing of CAB Proposed Mechanic Training Rules Expected Following Industry Complaints

Complaints from mechanic school operators that CAB's proposed increases in minimum hours of instruction for courses leading to mechanic ratings were excessive and would impose hardships on students and schools may lead to a downward revision of these minimums.

F. S. Anderson, technician in the CAB's Safety Rules Section and author of the proposed revisions to Parts 24 and 53 of the Civil Air Regulations relating to requirements for mechanic certificates and mechanic school certificates, said the volume of comment received following circulation of a draft release on the proposed changes had been "unusually heavy," and that in view of arguments advanced it was probable at least two of the proposed revisions would be modified before adoption.

One probable modification, he said, may be made in the section increasing the length of mechanic school courses. As set up in the draft release, this section would increase from 960 to 1,360 the minimum hours of instruction for the airframe course, and from 960 to 1,120 the minimum hours for the power-plant course, making a total of 2,480 hours required for an A & E rating.

Anderson contended these minimums are not too high, but said operators have complained they would make the length and cost of such courses prohibitive for numbers of students and might put schools out of business. Therefore, he said, serious consideration is being given to making a concession and lowering the proposed minimums.

He pointed out that most mechanic schools have learned from experience that they are unable to give sufficient instruction in the minimum hours previously specified, and that most schools now hold to higher minimums than those required. Furthermore, he added, a study of official records shows that a "surprising" number of mechanic school graduates have been failing the CAA examinations for mechanic certificates.

The other probable change would be in the proposed revision of Sec. 53.21, which deals with the number of instructors required in a mechanic school. It was proposed to require at least one instructor for each class of 30 students or less simultaneously receiving instruction in the theory of each subject, and to require at least one instructor for each class of 15 students or less simultaneously receiving instruction in shop practice. This proposal was made, according to Anderson, because experience indi-

cated one instructor could not do justice to any larger classes, especially, as in the shop practice courses, when all the students have to group themselves around a carburetor or some other component which the instructor is explaining.

### More Instructors Needed

Principal objections to this proposal came from high schools and public vocational schools giving such courses, the objection being that it would force them to employ more instructors and that they might have to suspend their courses because of inability to meet the resulting increases in expenses. So CAB probably will yield on this point and revise upward the ratio of students to instructors in the interest of keeping these courses open.

The addition to Part 24 of propeller, instrument and radio mechanic ratings does not mean that A & E mechanics will be required to hold such ratings, said Anderson, although it will be to their advantage to do so. Authority to perform and certify such work would be given to those desiring to specialize in these fields without having to qualify for airframe and power-plant ratings. Existing regulations require major overhaul of propellers and instruments to be made either by a certificated repair station (of which there are comparatively few) or by the manufacturer of the product involved. The new ratings are intended to greatly facilitate and expedite on-the-base major repairs to propellers, instruments and radio.

\*\*\*\*\*

**Cal-Aero Technical Institute**, of Los Angeles, reports enrolment in its courses has passed the 1,700 mark. The school offers aeronautical engineering and master mechanic courses, as well as a fully approved flight training program.

**Dallas Aviation School** has promoted B. B. Morrison to position of supervisor of aircraft and engine curriculum of its technical division, succeeding E. E. Robinson, who has been appointed assistant superintendent of the technical school.

**Van Dusen Aircraft Supplies, Inc.** recently opened an eastern division headquarters at Teterboro (N. J.) Air Terminal, with George R. Galipeau in charge. Consisting of general offices, sales store and warehouse, the new headquarters provides both a wholesale outlet and a model store to assist dealers in their own merchandising.

**Metropolitan Aviation Corp.** has begun commercial helicopter service at New York with the first of two helicopters purchased from Bell Aircraft Corp. Operations are being conducted from Westchester Airport temporarily, but Harold P. Moon, president, said arrangements are

being made to hangar the helicopters at the Midtown Skyport, 23d Street and East River, and to operate from there.

**McFarland Flying Service** has opened a complete fixed-base operation at McFarland Airport, four miles south of Springfield, Mo., under management of E. H. McFarland, conductor of a wartime CPTP school. Besides being an Aeronca distributor, McFarland operates a flight training program, charter services, sight-seeing flights, an aircraft repair shop and plane storage in large or individual hangars.

**Skyway Corporation** has started regular helicopter service from Boston airport to a downtown Boston office building, charging \$3 for the service, which requires less than three minutes, as compared with 30 to 40 minutes by automobile. Officials said the service was only the start of a program which will eventually link the airport of every important New England city to the city itself.

**Rankin Aviation Industries**, with headquarters at Rankin Field, Tulare, Calif., has acquired aircraft distributorships in four West Coast States and in British Columbia. Rankin has applied for approval of an air transport rating course to round out its G.I. training program. A crop spraying division is to be started in the near future, supplementing the present crop dusting service.

**Aviation Service Co.**, of Kansas City, Mo., has appointed as manager of its overhaul and service division George H. Klenk, Jr., who for eight years was general foreman of instrument overhaul for TWA.

**Southern Airways** has named Thomas R. Foster as manager of its parts department, with headquarters at Atlanta Municipal Airport. He will be responsible for both sales and purchases of all components of the aircraft handled by the company. His previous connections have been as assistant director of procurement for PCA and sales manager for Luke Harris Industries at Willow Run Airport.

**Embry-Riddle Co.**, is now exclusive agent for all War Assets Administration surplus aircraft, parts and components in Puerto Rico.

**Central Aircraft, Inc.**, of Yakima, Wash., has been awarded Bell Aircraft Corp.'s first helicopter dealership. Central is authorized to sell Bell helicopters, parts and supplies, as well as to provide maintenance and repair service. It recently inaugurated a helicopter pilot training school.

**Aviation Training School, Inc.**, of Boston, is emphasizing the development of international travel by offering both day and evening courses in pertinent aviation subjects. Officers of this school are: Louis F. Musco, president, and George J. Brennan, Jr., director, both active in aviation training programs in New England, New York and New Jersey.

### Instructor Authority Extended

Procedures have been set up by the Civil Aeronautics Administration whereby all rated flight instructors may be authorized to issue temporary student pilot certificates. Heretofore, such certificates could be issued only by CAA inspectors, with the results that applicants frequently experienced considerable inconvenience and delay in obtaining them.

## CAA Field Tests Hold Hope For Attacking Noise Problems

### Report on Airport Research Study Ready Next Month

Laying the foundation for a broader attack on the problems arising from noise levels associated with aircraft in airport vicinities, the Technical Development Service of the Civil Aeronautics Administration is conducting comprehensive tests of aircraft noises at Indianapolis Municipal Airport and a nearby small airport.

Far more comprehensive than any similar tests conducted heretofore, the current tests are due for completion late this month, and T. P. Wright, Civil Aeronautics Administrator, expects to have a report ready for distribution to interested parties in June.

A. L. Morse, chief of the CAA's aircraft development division, is in charge of the field tests, which have the following objectives:

(a) Obtaining sound level data covering sufficient locations and aircraft types so that the peak noise levels in the vicinity of any proposed airport used by aircraft of any horsepower rating may be readily estimated.

(b) Obtaining comparative sound level data which will indicate the relative sound levels produced by various representative aircraft types and models.

(c) Measurement of noise levels produced by other common sources, such as automotive traffic, railroad trains, and transient airway traffic.

(d) The general determination of sound duration and principal frequency components of aircraft and other common noise.

Equipment being used in the tests includes an Electrical Research Products, Inc. Type RA-277 Sound Frequency Analyzer and Type RA-246 Graphic Level Recorder, both operated on a portable power supply. A transit sighting arrangement will be used for aircraft altitude determination where low altitudes are involved.

#### Controlled Conditions

The tests are being carried out with the sound measuring equipment located at approximately 20 field locations, which vary from day to day according to the runway being used. Sound level readings will be obtained at all or some of the locations under the following conditions:

(1) With three to four controlled aircraft of different power ratings (from 65 hp to DC-3 size) taking off along the runway and climbing at full take-off power along a straight path to an altitude of 1000 ft.

(2) With the controlled aircraft passing over the line of the runway at cruising power, and at constant altitudes of 400, 800 and 1,200 ft.

(3) With uncontrolled normal aircraft traffic, of miscellaneous aircraft types, taking off along the runway and following the traffic pattern.

(4) With controlled and uncontrolled aircraft warming up and racing engines on the airport.

Measurements of relative noise produced by different types of aircraft will be obtained by ground tests and will be checked by data previously obtained with the aircraft in flight.

#### Flight Data as Check

Results obtained from the Indianapolis tests are expected to permit the plotting of contour maps showing the peak sound levels existent at various locations with respect to the airplane path. Such maps will be made for each of the various conditions of normal airplane operation in the vicinity of the airport and for the various airplane types. Such maps then could be applied with reasonable accuracy to any airport used by aircraft of known maximum horsepower rating. Data obtained concerning sound duration, sound frequencies, traffic and train noises also will be of general application.

The maps and report are expected to be of great value to airport operators and their attorneys in litigation based on the nuisance associated with aircraft noises.

### Discussion Leaders Named For Airport Convention

Discussion leaders have been named for airport development panels which will be held at the annual convention of the American Association of Airport Executives to be held in Chicago May 12-15 in conjunction with the specialized trade exhibition staged by the American Airport Exposition.

Panel leaders will be: Dr. John J. Green, chief research aeronautical engineer for the Air Transport Board for Canada; Leslie A. Bryan, director of the Institute of Aeronautics for the University of Illinois; Dr. John H. Frederick, professor of transportation and industry, University of Maryland; Charles F. Rhyne, general counsel for the National Institute of Municipal Law Officers, and Edward C. Sweeney, professor of transportation law at Northwestern University and editor of the Journal of Air Law and Commerce.

## Airport Notes

**New York:** The Port of New York Authority has signed a 50-year contract, effective June 1, whereby it will take over La Guardia Field, Floyd Bennett Field and Idlewild Airport and make ultimate expenditures totaling about \$200 million for their development, expansion, rehabilitation and operation. The contract obligates the Port Authority to pay up to \$4,000,000 of condemnation costs at Idlewild and to contribute \$3,500,000 to the cost of airport projects listed in the city's 1947 capital budget. The city is guaranteed a minimum annual rental of \$300,000 until 1957 and \$450,000 thereafter, with an option to take 75% of annual net revenues, as against 25% for the Port Authority after allowances for 5% reserves to meet Port Authority debt service requirements. The New York Airports Committee, representing 17 scheduled airlines, described signing of the agreement as a stride toward "developing and maintaining New York City as the aviation capital of the world."

**Detroit:** A full-time director is being sought by the Detroit Metropolitan Aviation Authority. Applications for the position should be addressed to Eugene L. Van Antwerp, authority chairman. One of the director's first duties will be a complete review of existing engineering surveys and reports relating to Detroit's major airport needs. A discussion of future airport plans with airline representatives is slated soon, some members of the Authority feeling that Willow Run is not the solution for the Detroit metropolitan area.

**Boston:** The proposed transfer of control and operation of the Logan International Airport from the Massachusetts Public Works Dept. to the Massachusetts Aeronautics Commission has been advocated by a number of officials and flying groups in the Boston area.

**Baltimore:** Flight operations (landings and take-offs) at Baltimore Municipal Airport for the first three months of this year totaled 30,170, an increase of 87% over the 16,129 operations recorded for the same period last year. March, latest month for which figures are available, showed 12,203 flight operations, as compared with 7,417 in February and with 8,132 for March, 1946.

#### Pan Am Moves to L. A. Terminal

Pan American Airways moved its Los Angeles base of operations from the Lockheed Air Terminal at Burbank to a new international air terminal at Los Angeles airport April 15, and its Clippers started operating from it the following day, Arthur Ayres, southwest regional director, has announced. Pan Am has signed a long-term lease with the city of Los Angeles for the former Air Transport Command hangar and has started on a program of redecorating and improvement with an outlay of \$25,000 budgeted at the start.

# Lack of Uniform Landing Fees Plague International Lines

## Most Charges Are Based On Gross Weight of Plane

By FRANK M. HOLZ

Among the numerous procedures and charges that plague international airlines are those connected with landing fees. The greatest number of countries base fees on maximum gross weight of aircraft but there is no uniformity whatever in the scale of charges. Other nations charge by "net weight," engine horsepower, aircraft types or an "area" formula. In addition, there are variations for day and night landings, transit or terminal landings, landings on grass or paved runways, separate charges for takeoff and so on.

The Research Dept. of KLM Royal Dutch Airlines has made a study of landing fees in the various countries and areas to which the company operates. The data compiled will be used by Dutch representatives to meetings of the International Air Transport Association (IATA) and the International Civil Aviation Organization (ICAO) as evidence of the need for greater standardization and simplicity in landing and takeoff fees around the world.

There follows a country by country summary of pertinent information compiled by the KLM staff. Costs are given in national currencies and usually also in Dutch currency. Current official exchange rate is 2.67 guilders or florins (same unit) to the U. S. dollar, or 37.45 cents for one guilder or florin (fl.).

**England and Scotland:** Landing fees at civil airports are assessed on maximum gross weight of aircraft. Rates vary for grass and concrete runways.

Max. Gross Weight (lbs.)	Grass	Concrete
25,000-30,000	£3-7s-6d	£5-12s-5d
Over 30,000, per each 5,000 lbs	7s-6d	12s-6d

**Eire:** A landing fee equivalent to 158.22 guilders is levied on trans-Atlantic DC-4's plus 2.65 guilders per passenger and .045 guilders per kilogram of freight. For European traffic the charges are 138.02 guilders for a DC-4 and 63.08 for a DC-3 plus 1.6 per passenger and .27 per ten kilograms of freight.

**France:** A prewar system based on "average engine-power" has been replaced by a scale based on max. gross weights. Landing fees are: 80 French francs (1.68 fl.) per ton for the first 25 tons and 100 Fr. francs (3.36 fl.) per ton over 25 tons. For night landings an additional 1,000 francs is payable at airports with customs staffs and 500 francs if the field has no customs officials.

**Netherlands:** The Dutch still follow a prewar system whereby charges vary according to an area figure obtained by multiplying the aircraft's length and breadth. Landing fees are: for the first landing .50 fl. per 50 sq. meters; second to fifth landings inclusive .25 fl. per 50 sq. meters; sixth and subsequent landings of the same aircraft on the same day (e. g., training flights), free. For runway lighting, 5 fl. are charged for each landing and takeoff separately, unless both are made within a half-hour period.

**Belgium:** Landing fees are based on a scale of "aircraft net weight." Fees for night landings are double the daytime rates. Daytime fee for a DC-3 is 150 Belg. francs or 9 fl.

Aircraft Net Weight	Daytime fees (Belg. francs)
1,200-2,000 kgs.	30
2,000-4,000 kgs.	60
4,000-6,500 kgs.	100
6,500-9,500 kgs.	150
Over 9,500 kgs.	200

**Denmark:** Landing fees assessed according to max. gross weights.

Gross Weights	One Danish Crown or 54 guilders per each:
Up to 10,000 kgs.	500 kgs
10,000-20,000 kgs.	1000 kgs.
Over 20,000 kgs.	2000 kgs.

It is evident that charges are relatively much lower for the largest and heaviest types of aircraft. Use of runway lights at night cost an extra 12 Danish crowns per hour.

**Norway:** Landing fees vary with max. gross weight. KLM states, however, that the exact scale of charges is "not known" and is variously reported as 25.6 to 39.6 Nor. crowns (13.49 to 20.8 fl.) for a DC-3.

**Sweden:** Landing fees based on max. gross weight. Fees at Bromma (Stockholm) and Bulltofta (Malmo) Airports are .20 Swed. crowns per 100 kgs. For scheduled air services there is a rebate of 25% but this is almost nullified by a supplementary charge of 20% on many of the fees "on account of present conditions." Use of runway lights costs an extra 12 Swed. crowns (8.75 fl.) at Bromma, 15 Swed. crowns (10.95 fl.) at Bulltofta.

Denmark, Norway and Sweden are now discussing a uniform system for landing and storage fees.

**Switzerland:** Landing fees are 2.5 Swiss francs (1.52 fl.) for each 1000 kgs. of max. gross weight. For night landings and takeoffs there is an extra charge of 12.5 Swiss francs.

**Newfoundland:** The landing fee at Gander for a Constellation is approximately 221.85 fl., for a DC-4 208.8 fl. and for a DC-3 104.4 fl.

## Soviet Union Seen Rapidly Overtaking U. S. Aviation Lead

The Soviet Union is fast overtaking the U. S. in both aircraft manufacturing and development of air transport services, according to an article by W. B. Courtney in the April 26 issue of Collier's.

Aeroflot, the Soviet civil air fleet, now operates scheduled services over about 50,000 route-miles, linking Moscow with regional centers of all 16 Soviet states "as well as the satellite nations", Courtney states. He asserts that present standards of skill and efficiency are far better than is generally realized abroad. The so far unheralded rapid expansion and improvement of Soviet air services are credited, however, not only to the Russians but even more to Germans—executives and technicians of the former German airline Deutsche Lufthansa.

The article states that practically the entire surviving personnel of Lufthansa is working for the Soviet Union today. "Lufthansa has simply moved from Berlin to Moscow". It is Lufthansa's wealth of experience and skill that is actively building up Aeroflot, with Russians chiefly in the role of "helping hands".

Courtney also states that Russia feels it may not have to reach a bilateral air agreement to gain access to U. S. territory but may be able to do so through control of airlines in Czechoslovakia (which has an air agreement with the U. S.), Poland, Rumania, Hungary or Yugoslavia.

The Soviet Union will produce in 1947 about 100,000 aircraft of all types, military and civil, Courtney estimates. Greatest production year in the U. S. was 1944 with 96,369 planes, chiefly military. Current Soviet production of their version of the DC-3 is estimated at 360 a month. The U. S. produced 480 transports all last year.

The Soviet Air Force had 16,420 fighters and 4200 bombers in 1945 and this year "it is twice as strong."

## IATA Reports Good Airline Safety Record

Two-thirds of the scheduled international airlines of the world ended 1946 with a 100% perfect safety record, according to the first world-wide survey of air transport safety statistics made recently by the International Air Transport Association (IATA).

Returns from 60 IATA airline members indicate that they flew a total of 8,346,000,000 passenger-miles during the year. There were 33 fatal accidents resulting in a total of 298 deaths. This means a record of 28,314,000 passenger-miles per fatality. Forty-two of the airlines had no fatal accidents at all during the year.



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# Industry, Government Agree On Civil Plane Aid Program

## Federal Assistance Designed to Increase Light Plane Utility

By SCOTT HERSHEY

The fluctuating light plane manufacturing industry has agreed to accept a proposal for government aid in the development of personal aircraft of greater utility in order to stimulate this phase of civil aviation.

William A. M. Burden, assistant secretary of commerce for air, and T. P. Wright, administrator for civil aeronautics, made the proposal at a meeting in Washington last month of chief engineers of companies now manufacturing personal aircraft.

There is no doubt there were skeptics in the meeting when Burden started to speak. There was little doubt that the reluctant had been convinced after Burden finished his presentation. The discussion which followed, generated some heat at times, but was limited for the most part to the basic policy questions involved and did not get into the type of development which might be financed by a Federal-aid program.

Those details will come later. Meanwhile, Burden suggested the formation of an industry-government committee to select a list of development projects considered necessary to improve the airplane to the point where it would be purchased and usefully employed by a wider segment of the public. The committee will determine the relative importance of development projects and propose a priority list. This list would be taken before the Air Coordinating Committee by the CAA for approval with a request that the appropriate member agencies consider it for submission to Congress for the necessary funds.

### \$5,000,000 Plan Suggested

Although no definite figure of the cost of the program was discussed, Wright suggested the expenditure of \$5,000,000 over a period of three years, to be used in financing contracts to the industry. Noting that some projects would fall naturally into the development activities of the Army, Navy or CAA, he proposed that funds for such improvements, if voted, be put in the budget of those agencies.

Three methods of getting such developments were discussed: through competition within the industry for which prize money (in form of government purchases) would be available; through contracts for individual projects let by government agencies; and through purchases by government of aircraft or components on the basis

of performance specifications.

The Aircraft Technical Committee of the Aircraft Industries Association before which the proposal was made, decided to recommend the idea favorably to the Personal Aircraft Council at its meeting early next month in Los Angeles. Following that, if approval is voted by the AIA board of governors, which is expected, the industry-government committee will meet and prepare its idea of projects to be developed.

From the tenor of the discussion at the Washington meeting it appeared that the increased development contracts will be devoted largely to special features, devices or components, or possibly even a complete aircraft which promises, if successfully developed, to increase substantially the utility of aircraft for personal use, and which it is agreed the industry is unable or unlikely to finance itself.

### Highly Uncertain Future

Despite record 1946 production, small plane manufacturers face a highly uncertain future. On one hand, civil aircraft manufacturers had their biggest year in history with shipment of 34,900 planes valued at \$170,000,000. The 1946 figures exceed the previous all-time peak year of 1941 by 41%.

On the other hand, there is much evidence that the pent-up wartime demand for civil aircraft was largely met by the 1946 output of new planes and the sale of some 31,000 surplus craft. Production has tapered off since hitting a peak of 4,700 planes in August.

Several lightplane manufacturers have been out of production for extended periods. Others have been going through reorganization or bankruptcy proceedings. Few ended the year with balance sheets written in black ink and the backlogs of firm orders in the case of most companies does not exceed four months production.

### Navion Production Halted

Aviation analysts are watching carefully the trend toward larger airplane models and were impressed by figures for January showing shipments of three- and four-place planes exceeding those of the familiar two-seater for the first time. The shift from the two-place model to a four-place higher utility plane is a major change. Turning to the history of the automobile, it is remembered that the shift from open to closed cars which took place in the 1920's was also a major change and one that paid dividends.

The situation within the industry is a highly fluctuating one. North Ameri-

\$224 Per Pound

The approximate cost per pound of prototype aircraft has risen from \$24 to \$224 in the field of conventional types alone in the past 12 years, according to a Consolidated Vultee report. The rise was attributed largely to sharply increased costs of development work. Initial development costs for jet-powered aircraft indicate a starting point of more than \$400 per pound.

can Aviation, for example, decided to shut down production on its Navion for 30 days for readjustment of production schedules and inventory. The four-place Navion found favor among individual purchasers having the means to operate a higher-priced plane, but its best potential market consisted of companies and corporations in a position to use a company plane in business.

Engineering & Research Corp., manufacturers of the Ercoupe, on the other hand, was advertising for workers to augment the present staff and announced that the company presently is operating at about 10 airplanes a day, which is about half enough to fill its orders. The company expects to fly the prototype of its new four-place model sometime this summer.

Cessna Aircraft Co. issued a comment that in looking at the pattern for the past year it seems likely that the aircraft industry will, to a considerable extent, follow the pattern set by automobile industry; namely, "it will evolve to the point where three or four strongly financed well-operated companies with good dealer organizations build about 90% of the airplanes in the personal plane field. Cessna, at the same time, challenged Piper's position as the leading producer in the field.

From still another viewpoint, Taylorcraft Aviation Corp., a well-known name in the field, was a casualty. Claims totaling \$1,219,735 have been allowed. All secured claims will be paid, but the company is out of business. Globe and Culver have disappeared from the light plane picture. It is a changing picture which may not be recognizable with the passage of time. The government-aid program should help to provide the utility of such craft which would in turn assist in stabilizing the industry.

The government aid program is designed primarily to accelerate improvement of airplanes in the light-plane field. Burden pointed out that the government has aided in the development of transport planes with mail subsidies and contended that the air transport industry might have taken 10 years additional to reach its present stage without government subsidization.

For some time private flying has been caught in a vicious circle of low utility and high costs. This must be replaced by greater utility and lower costs if civil aviation is to develop to its fullest extent.

## Industry Notes

**Anniversary:** Chance Vought Aircraft, division of United Aircraft Corp., one of the oldest military airframe manufacturers, observed its 30th anniversary April 21 with an all-day program at its Stratford, Conn. plant.

**Lockheed Service:** Lockheed Aircraft Service, Inc., a subsidiary of Lockheed Aircraft Corp. has been awarded a \$3,500,000 contract by the Navy for overhaul and maintenance of 60 R5D transports, the Navy versions of the C-54, and 50 R50's, the Lockheed Lodestar.

**NA Employment:** North American Aviation plans to employ about 3,500 workers at its new Long Beach plant for production of the B-45 four jet bomber. The company has a contract for 96 planes, which will cover two years and also has almost two years of production on its contract for 250 P-82 Twin Mustang fighters.

**Douglas Delivery:** Douglas Aircraft Co., has completed production of the Army's order for 14 C-74 Globemaster transports and delivered the final plane to the Air Transport Command.

**Clipped Propellers:** Northrop Aircraft is temporarily solving its propeller problem on the B-35 Flying Wing by using 19-foot, three-bladed Curtiss propellers designed for Consolidated Vultee's B-36 bomber, and clipping off three feet to reduce the diameter to 16 feet. These will permit the flight test program to be continued pending a new single rotating prop to be designed for the craft.

**New Office:** Air Equipment Co., Burbank, Calif., has opened a new regional sales office at 111 Northeast 2nd Ave., Miami, Fla. W. W. Quinn has been appointed Miami regional manager.

**Student Engineers:** Chance Vought Aircraft will select senior engineering students from 55 leading colleges and universities this spring and give them intensive training in aeronautical engineering and actual shop work in a program to maintain the company's engineering staff at a high level.

**New Helicopter:** Kaman Aircraft Corp., has successfully flown its new helicopter, the three-place K-125-A, at Bradley Field, Windsor Locks, Conn.

**G-E Tester:** Wright Aeronautical Corp., has acquired from General Electric Co., what is described as the most powerful shock-absorbing equipment ever constructed, with a "take-it" ability of 20,000 hp. for testing aircraft engines.

**Continental Jet:** Continental Motors Corp. in addition to its development of ram jets and air-cooled engines, is working on pulse jet engines, gas turbine projects, compound engines combining gas turbine and piston engine principles and light weight helicopter engines.

**New Transmission:** A new type of transmission which can shift into any one of four forward speeds in one second and which is readily adapted to push-button control has been announced by Wright Aeronautical Corp. It has only half as many parts as present automatic types.

**Piper Advertising:** Piper Aircraft Corp. has enlarged its 1947 advertising campaign to include a \$430,000 program planned in cooperation with 1,500 domestic dealers and distributors and also using foreign newspapers for the first time. Hutchings Advertising Co., Rochester, N. Y. handles the account.

## 5,735 Personal Planes Shipped in Jan.-Mar.

Complete airplane shipments for the first three months of 1947 by 12 personal aircraft manufacturers reporting to the Aircraft Industries Association totaled 5,735 aircraft with a manufacturers' net billing price total of \$17,671,000.

Shipments in March amounted to 1,724 planes with a manufacturers' net billing price of \$5,085,000. The shipments were down from both the February and January figures as shown in the below table prepared by the Personal Aircraft Council and the Industry Planning Service of the AIA.

Complete Aircraft Shipments			
Company	Mar.	Feb.	Jan.
Aeronca .....	146	173	161
Beech .....	63	12	1
Bellanca .....	24	27	51
Cessna .....	369	310	420
Ercoupe .....	N.A.	118	124
Funk .....	2	4	7
Luscombe .....	82	81	120
North American .....	101	221	238
Piper .....	493	571	665
Republic .....	133	126	103
Stinson .....	255	247	236
Taylorcraft .....	38	42	31
Texas Eng. ....	18	18	22
Total .....	1,724	1,832	2,179

N.A. Not available.

' Not included in total

## Bell Wins Fight For Board Control

A stockholders committee which sought a majority on the board of directors of Bell Aircraft Corp., lost their fight at the company's annual meeting in Buffalo when Lawrence D. Bell, president, and 11 other directors were reelected.

The stockholders committee had charged "the present management of the company with placing the material benefit of the president (Bell) ahead of future operations and development of the company."

Bell replied that completely inaccurate statements had been made regarding his compensation. He also asserted that the committee, of which Jackson Martindell, New York financial consultant, was a moving figure, had in mind a merger of the Bell company with another concern. This, Martindell denied, although he did say that "if attractive opportunities along these lines present themselves they should be considered carefully."

Some 348,000 shares were represented either by proxies or by stockholders at the meeting, which lasted for 12 hours.

### Judd Wins SAE Award

Frederick V. H. Judd, powerplant technical engineer, Republic Aviation Corp., has been awarded the Society of Automotive Engineers' Wright Brothers Medal for 1946.



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NATIONAL AIRLINES CONTINUES  
TO OFFER THE BEST OF SERVICE**

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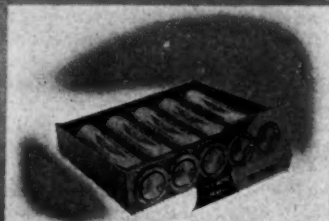
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## Manufacturing Personnel

Herbert E. Ryker, v. p.-manufacturing and material, for Lockheed Aircraft Corp., has been nominated as a director to succeed R. C. Walker, resigned.

Morgan R. Schermerhorn, Jr., controller of the Glenn L. Martin Co. since October, 1942, has been elected v. p.-controller.



Shaw

Mussen

George B. Shaw, former General Motors executive, has been named director of commercial sales for the Glenn L. Martin Co., succeeding P. M. Magruder who resigned last month. Shaw has had 17 years of experience in sales and promotion activities in the automobile industry.

Robert L. Mussen is the newly appointed division manager of Consolidated Vultee Aircraft Corp.'s San Diego division.

James Stalnaker, who has been with Ryan Aeronautical Co. for five years as a metal products engineer, has been appointed sales engineer in charge of the eastern office of the company's metal products division being established at Roosevelt Field, L. I., N. Y.

Robert R. Scholl, former editor of the company's house organ, has been appointed public relations representative in New York City for North American Aviation.

Phil McKnight, previously assistant public relations director, has been promoted to public relations director for Beech Aircraft Corp.

Jack Anderson, formerly assistant industrial and public relations director of Douglas Aircraft Co., has been appointed director of public relations of the General Tire and Rubber Co. of California. He will direct public relations, publicity and advertising for all divisions, including the Aerojet Engineering Co.



Jacobson

Hovgard

Allen W. Jacobson has been promoted from manager of Boeing Aircraft Co.'s experimental shops to factory general superintendent. He succeeds C. M. Weaver, who resigned. Jacobson's duties in the experimental division have been assumed by Fred P. Laudan, v. p.-experimental manufacturing.

Paul Hovgard, who has been associate director of Cornell Aeronautical Laboratory, has been appointed general manager of Piasecki Helicopter Corp. James C. Scott, formerly with Glenn L. Martin Co., has been appointed factory manager for Piasecki, while William P. Palmer, also formerly with Martin, has been named assistant treasurer and comptroller.

## B. W. de Guichard Elected President of Airquipment

B. W. de Guichard, for the last several years director of materiel at Lockheed Aircraft Corp., has been elected president of the Airquipment



de Guichard

Co., Burbank, Calif. Before joining Lockheed, de Guichard was president and general manager of the A. C. Spark Plug Division of General Motors.

The firm's aim, de Guichard said, will continue to emphasize standardiza-

tion of ground handling equipment, increased volume of production runs with consequent price reductions on all items manufactured. Organized in 1945 as a wholly owned subsidiary of Lockheed, the Airquipment Co. has rapidly expanded in size and recently opened regional offices in New York, Chicago and Miami.

C. F. Nielsen, production manager, has taken over de Guichard's former post as director of materiel of Lockheed.

## Flottorp Elects New Officers

Major changes have been made in ownership of Flottorp Manufacturing Co., Grand Rapids, Mich., manufacturer of fixed-pitch and controllable propellers for aircraft engines up to 300 hp. Roy G. Taylor, president and treasurer, now owns or controls 93% of the outstanding stock. New officers elected include C. S. Herrud, vice president and Otto Norton, secretary. O. C. Hall resigned as vice president. Ole Flottorp, founder of the company and owner until 1944, continues as technical consultant. Donald B. Miller has been appointed chief engineer.

## 3 New Directors for Douglas

Three new directors have been elected to the Douglas Aircraft Co. board: Neil Petree, president of Barker Brothers Corp., Los Angeles; Frederick E. Hines, corporation counsel for the company who established the Douglas legal department in 1939, and Edward H. McLaughlin, president of the Union Hardware and Metal Co. of Los Angeles. They succeed M. B. Rapp, Dr. R. D. Robinson, and Harry Elliott, who resigned recently.

## Ryan Furloughs 275 Workers

Ryan Aeronautical Co. has had to furlough approximately 275 of its 1,800 workers because of cancellation of a Bureau of Aeronautics contract involving a Navy combat plane. Involved in the layoff are sheet metal workers, flight mechanics and engineers of the company's experimental department.



# Operations and Maintenance Review

Including

COMMUNICATIONS—NEW EQUIPMENT—GROUND FACILITIES

## Safety Bureau Head Outlines Progress With Landing Aids

### Dawson Urges Early Use Of Well Integrated System

By W. S. DAWSON  
Director, Safety Bureau  
Civil Aeronautics Board

Just before the turn of this year a series of tragic air crashes made headlines and profuse copy which jolted the Nation and Congress into finding out more about Air Safety. Both Houses of Congress immediately delved into the economic and technical problems of the aviation industry.

One result of this probing, plus the release of Army-Navy war-born safety devices and methods, has been to put a number of aeronautical facts under a strong spotlight. But the most important outcome is an aroused and tremendous public interest in the overall subject of air safety, the inconveniences of air travel due to interrupted service, and what might be done to improve these.

To begin with, how safe is air travel on our domestic scheduled airlines?

Think over these facts: In 1946 about 13,000,000 domestic passengers paid air fares. That number is close to 10% of the population of the entire country. Of those 13,000,000, only 73 were killed during the airlines' 6,000,000,000 (6 billion) revenue passenger miles of flying. Look at it this way. Those figures show that you would have to cross the country from coast to coast more than 27,000 times on a scheduled air carrier to use up your aeronautical life expectancy!

In the light of these figures, which show an almost trifling hazard to air travel as far as an individual is concerned, what's all the uproar on air safety about? It's about landing aids, which is a generic name for a number of electrical, electronic, optical and heating devices aimed at making it easy for airmen to do what birds can't do—land with practically no vision during sour weather.

Here is the problem and its background. Pilots can fly and navigate when bad weather prevents their seeing beyond their windshield. They can go safely and consistently from one place to another in that kind of weather but, if the condition continues down too close to the ground, they can't land when they get there.

Landing aids are the answer. Development and use of landing aids should reduce and possibly eliminate these bad weather landing crashes,

and, incidentally but nevertheless importantly, reduce cancelled schedules with their resulting disruption of operations which now place such a staggering financial burden on the airlines. There are several new landing aids, best known by their alphabetic names.

First is the so-called *Ground Controlled Approach*, known as GCA. It is not an accurate description and might better be *Ground Supervised or Instructed Approach*. It is based on the principle of radar.

landings in which the pilot was talked all the way to the runway.

The second landing aid is the so-called *Instrument Landing System*, or ILS. This name is also a misnomer because it cannot land an airplane either, although it is possible to couple the system to an automatic pilot so that the auto-pilot will bring a plane extremely close to the ground. From there it must be landed visually and manually except under hand-picked conditions when the auto-pilot can actually put the wheels on the runway.

Essentially ILS is a radio approach path which the aircraft follows. This path projects from and in line with the runway, and is slanted up at a proper angle for an approaching air-

### Estimated Cost of Integrated System

The following figures supplied by the Landing Aids Experiment Station at Arcata, California, show approximate costs of an integrated instrument landing system.

1. GCA, including concrete stand and hook-up to supply commercial power	\$160,000
2. ILS, including housing of localizer and glide path	30,000
3. FIDO installed in 200-ft. sections on 6,000-ft. runway, using high pressure and low pressure burners	200,000
4. High intensity lights:	
(a) Runway lights for 6,000-ft. runway	25,000
(b) Approach lights on pedestals, 3,000 ft. out from runway	70,000
	<b>\$485,000</b>

A loose analogy to its use is flight of bats in total darkness and confined places—the bat emits a shrill noise, hears that noise echoed from obstructions, and navigates accordingly. Radar is not magic despite its war usefulness and the great publicity it has had. It amounts to an electric eye, able to pierce darkness and clouds and to receive the reflection of its own radio waves from anything they meet. Through use of this electric eye, an operator on the ground can tell the distance, direction and altitude of an airplane in the vicinity by looking into an indicator about the size of a salad plate. Via two-way radiotelephone he can converse freely with the pilot and advise him how to turn, to ascend or descend, so that when the plane finally breaks through the overcast it will be in position to allow a ready visual landing on a runway with which it is already closely aligned.

GCA cannot land a plane. It is strictly an aid allowing a considerably closer bad weather approach to the ground than can be made without it. No equipment is needed in the plane other than a two-way radio. With GCA, the final landing must be made visually and manually although there have been a few experimental

craft to slide down like coal going down a chute. Unlike GCA, the ILS requires additional apparatus in the plane. The key of this apparatus is an indicator with a vertical and horizontal needle that tells the pilot to go to the left or right, or up and down, all on one dial, in order to follow the slanting flight path. In addition, two or more spaced radio transmitters on the ground automatically turn on different colored instrument panel lights, indicating to the pilot the distance to the runway ahead.

Third landing aid is a fog dispersal system, a contraction of *Fog, Intensive Dispersal Of*, commonly known as FIDO, which actually burns off runway fog. FIDO was used in weather-bound and war-racked Britain at a time when she couldn't afford to miss a single bet in order to get warplanes back on their home ground. FIDO consists merely of two rows of sunken pipe paralleling both sides of the runway through which diesel oil or kerosene is piped under high pressure to closely spaced burners. Over and near the runway the fog is heated and dried out. FIDO works ideally when there is no wind; not so well during high winds. However, dense fog is seldom accompanied by much

wind. FIDO might be likened to a blown-up, big-time version of your windshield's hot-air defroster.

The fourth landing aid is *high intensity ground lights*. Originally, airport lights were unable to penetrate murky weather effectively. Increasing the candlepower results in greater visibility but not in proportion to the candlepower used. To see a steady light twice as far requires four times the power; to see it three times as far, requires nine times the power; four times, sixteen times the power, and so on. Thus, the cost rises enormously as visibility is increased.

One solution to conquering the distance between the final approach altitude and the runway end lies in the use of tremendous amounts of candlepower and controlled direction of the light beams. The installation now being tested at Newark consists of 48 separate red neon light standards extending 3,500 feet out from the end of the runway on the left side of the approach zone. In the center of each neon unit there is a high intensity white flash capable of producing 240-million candlepower. This super-flash begins in the outermost neon unit, then jumps to the next unit, and so on until it travels the length of the approach zone in a second of time. It is like a repeated streak of lightning leading you into the runway.

To the pilot it is psychologically reassuring to have a visual check during the let down on into the runway. These new high intensity flash-beacons, able to penetrate the murk and fog,

will apparently meet this need.

At present these are the four most important bad weather landing aids. The first, GCA, must use ground personnel and equipment but requires no air-ground apparatus other than a two-way radio. The second, ILS, requires ground equipment without operators, but must carry special instruments requiring pilot interpretation. The third, FIDO, is a permanent ground installation needing only maintenance personnel. High intensity lights are in the same category.

The first two, GCA and ILS, were developed independently to allow a pilot to get very close to the runway in thick weather. Which is the better? Well, of your ears or eyes, which is the better—which would you do without? GCA amounts to an audio aid, and ILS to a visual aid. Both are highly reliable but neither is infallible.

Current opinion among the experts is that large commercial aircraft will use the pilot or auto-pilot interpreted ILS under the observation and subject to the advice of the ground man at the GCA. They are mutually supplemental and the well equipped major airport should have both.

In contrast, FIDO and high intensity lights are not as mutually supplemental as GCA and ILS. The former is an extreme measure used to open the runway under conditions of dense fog. It is estimated that there are but a dozen major fields in the country where the installation of FIDO would be justified.

High intensity lights come by their

name honestly—the type now installed at the Landing Aids Experiment Station at Arcata, California, has a 5000-watt bulb in each light unit and more than 30 such units are used in the approach zone. They are high on the "must" column of all landing aids. If GCA or ILS is the gangplank from airway to airport, the high intensity lights are the final step from the gangplank to the end of the landing roll. Integration of these aids, high intensity lights, FIDO, and ILS and GCA provide the most efficient instrument landing system now known.

The cost figures for such an integrated landing system are supplied by the Arcata, California, Landing Aids Experiment Station, which has been a jointly financed Army-Navy Installation and in which the Civil Aeronautics Administration and the Civil Aeronautics Board have keen interest. The Arcata figures are based on experimental installation of what amounts to pioneer equipment. They seem high but there is every reason to believe that they will be lowered as use of the various devices increases and as their refinement continues.

Are the results to be expected from these aids worth the cost? Well, it's next to impossible to arrive at the overall cost of a major air crash that kills upwards of 20 people. There have been several of them as disastrous as that caused by faulty approaches during bad weather. The over-all cost of a single crash made up of insurance money, loss of equipment, disrupted service, loss of Federal mail and of possibly expensive express, as well as curtailment of air travel generally, can total over a million dollars. And, most important of all, the dead cannot be brought back to life.

When a route is completely closed in by unflyable weather the airlines suffer a heavy revenue loss because they have to cancel flights, and refund money on tickets sold previously. But when a flight has to be cancelled en route because of weather the losses entailed in addition to ticket refunds include substitute ground transportation and often hotel expenses. During seven days of instrument weather at New York's busy La Guardia Field the total loss to lines operating there was authoritatively estimated at \$401,000.

Then there is the responsibility of public convenience. A closed field at one city can mess up scheduled operations at many other cities.

There is also the vital aspect of national defense in all commercial air transportation. In any future defense of the Nation our air transportation system cannot be effective if subjected to the whims and vagaries of weather.

Present public interest in the matter of landing aids is a sudden awakening to a long-time problem of air transportation. Therefore, it should be reassuring to know that something can be done about it. So let us use safety devices and landing aids that we have available now and not postpone their adoption in the belief that something better may be just around the corner.



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## New Impetus Given Move for Separate Cargo Plane Category

Prospects are good that the Civil Aeronautics Board will grant approval for a separate airworthiness category for cargo aircraft, when such an industry proposal is re-submitted to the Board later this year. The move to differentiate between passenger and cargo aircraft and operating requirements was given impetus at a meeting of Aircraft Industries Association's technical committees in Washington, April 15, at which the proposal was given general support by the manufacturers, Air Transport Association, Independent Airfreight Association, Army, Navy, National Aeronautic Association, and Civil Aeronautics Administration.

Creation of such a separate category, it is hoped, would prove an effective stimulus for further development of air cargo transportation, primarily through higher payloads and lower operating costs. A similar request from AIA for special cargo plane requirements was rejected by CAB in September, 1945, because "a convincing need for a separate category" had not been shown. However, a CAB representative told the meeting that the Board was prepared to reconsider its previous decision.

Some opposition to establishing higher power ratings for present type engines for use in cargo planes was expressed by R. W. Young, of Wright Aeronautical Corp., spokesman for the AIA engine technical committee. Under one suggestion authorization would be given for all-cargo planes to draw greater power from the remaining operating engine or engines—when one engine cuts out in flight—than permitted in passenger service. By thus providing for high emergency power rating, the payload could be increased considerably. The engine group objected to pushing up the ratings, since more tests would be required and additional overhaul and maintenance problems created.

Technical details of the proposal to be re-submitted to CAB will be worked out during CAA-industry discussions slated to start within about 30 days.

### CAA Approves Gander Radar

Operation of the radar system installed at Gander, Newfoundland last December by Pan American Airways on an experimental and training basis has now been officially approved by the Civil Aeronautics Administration.

Despite the CAA approval, however, American airliners will not be permitted to use GCA to set down at Gander in weather conditions below the present minimums except during an emergency. Present minimums for the field require a ceiling of 500 feet and visibility of one mile. U. S. airliners must abide by these limitations, but not foreign airlines.

### Average Airline Pilot

The average airline pilot and co-pilot in this country is 32 years old, weighs 165 pounds, is 5 ft. 10 in. tall and has logged 4,859 hours of flight time, according to a study made by the CAA's Aviation Medical Service, based on records of airline pilots who received transport medical certificates in 1946.

The CAA's statistics were taken only from records of men who were active enough in airline flying to have accumulated at least 150 hours of flying in the preceding six months. During the year this group averaged 63 hours a month, 37 during daylight hours and 26 at night. Incidentally, the pilots had such good sight that more than 97% of them did not require glasses.

## CAB Reports Findings On Connie Accidents

Two reports explaining accidents involving TWA Constellations in international service were issued by CAB on April 22.

The first accident reported on occurred Dec. 28, 1946, during a landing approach of a TWA plane at Shannon, Eire. The approach was being made at night in poor weather conditions; the ship struck the ground during a final approach turn.

Probable cause of the accident, according to CAB, was an error in altimeter indication, "the primary reason for which was the reversal of the primary and alternate static source lines, which led the pilot to conduct his approach to the airport at a dangerously low altitude." The reversal caused an altimeter error of nearly 300 feet. The Board said that negligence of TWA maintenance personnel played a part. The report indicated that TWA mechanics had initiated maintenance forms showing that tests of the plane's static system had been completed. According to the report, these tests could not have been made without discovering that the two static pressure lines had been switched.

An appendix to the report said that mechanical changes making reversal of the two lines impossible have since been made.

CAB said the Shannon accident could have been prevented if instrument low-approach facilities had then existed at Shannon.

The second report covered an accident of March 29, 1946, when another TWA Constellation, landing at Washington National Airport in wet weather, overshot a runway and crashed into an airport boundary ditch. The Board said this mishap was caused by "poor judgment" of the flight crew in attempting to land from a position which did not afford sufficient time to accomplish a satisfactory approach. Contributing factors were poor landing technique of the pilot in failing to reduce airspeed sufficiently for a safe landing (full flaps were not used).

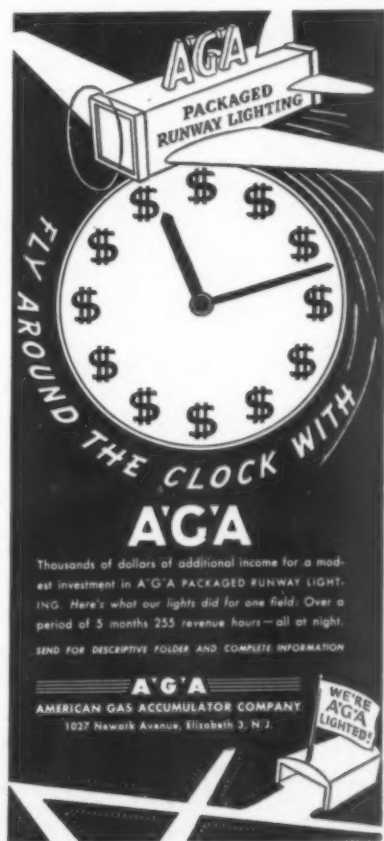


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## New Long Range Flight Plan Method Adopted by AOA

A new method of long range flight planning designed to place long range flight schedules and timetables on a precision basis never before achieved and effect substantial reductions in point-to-point flight times has been adopted by American Overseas Airlines after exhaustive tests, James G. Flynn, vice president-operations has announced.

Known as Best Time Track Operation, the new method is said to effect closer adherence to schedule, greater operating efficiencies, and savings in direct flying costs. Based on the pressure pattern flying principle that sometimes the longest way around is the shortest in time, the new system developed by AOA now enables transatlantic flight captains and navigators to select the optimum (quickest) flight path, based not only on the best altitude, but also on the route which best fits the pressure pattern.

A. K. Ohashi, who conducted the tests by AOA over the Atlantic routes between Gander, Newfoundland, and Shannon, Eire, explained that "until now, the conventional method of flight planning has been to compute the flight time for two or more altitudes, but limited to one route."

This route was chosen by inspection of the pressure patterns on the weather map as the one which possibly offered a saving in flight time. As the problems of finding the least time between two points are complex, the results were not always satisfactory or consistent. There was a need for a more scientific method of route selection. Best Time Track provides a selection based on the mathematical comparison of flight times.

To provide this basis for comparison a system of standard routes was determined so that one or another would normally fit the pressure (wind) pattern and show a significant saving in flight time. To calculate quickly the flight times, a technique of using only the on-course component of the wind was developed. These components are extracted directly from the weather map, which shortens the work so much that this complete flight planning pro-

cedure actually consumes less than did the old system.

This new method, which has been on trial by AOA for more than six months on its transatlantic routes, thus makes every flight an engineered flight operation with resultant operating efficiencies.

## Operations-Maintenance Personnel

Thomas E. Holt has been designated superintendent of system line maintenance for Capital Airlines, succeeding Andrew B. Cannon, resigned. Holt was formerly supervisor of maintenance in the airline's western region. Hugh A. Dugan, with the company since 1937, has been promoted to superintendent of aircraft maintenance scheduling, and Edwin R. Cunningham, who first joined the airline in 1938, has been appointed to the engineering section.

William D. Price, Jr., formerly with Mid-Continent Airlines in charge of ground operations, has been named superintendent of communications for Pioneer Air Lines.

Jasper Barnette, Jr., former operations superintendent for the Central America section of Pan American Airways, has been named superintendent of schedules for PAA's Latin American Division.

Richard A. Fagin, who joined American Airlines as co-pilot in 1930, has been appointed v. p.-operations for AA de Mexico, succeeding Tull Rea who has directed AA de Mexico's operations since 1944.

## Bartlett Directs RCA Aviation Activities

Col. Theodore L. Bartlett, formerly director of the international division of Aeronautical Radio, Inc., has been named coordinator of aviation activities for Radio Corporation of America. Col. Bartlett will be responsible for coordination of all aviation activities of RCA and its affiliated companies.

## Kidde Demonstrates Compounds For Fighting Nacelle Fires

Walter Kidde & Company, Inc., wartime manufacturer of aircraft fire-fighting equipment, has staged successful demonstrations of several new chemical fire-fighting compounds said to extinguish the worst nacelle fires in a matter of seconds. One of these, consisting of 82% monochlorobromethane, 9% methylene chloride and 9% methylene bromide, was developed and used extensively by the Germans during the war.

## 30 Hour Check

By DAVID SHAW

THE VOLUME of business might not be big, but if some vacuum cleaner manufacturer would develop an explosion-proof machine small enough to be carried into a DC-4 cabin and used for quick cleaning job, he could sell a few to every airline in the country. Some of the airlines aren't too fussy about insisting on explosion-proof electrical equipment for routine servicing, but all of them have occasions when paint or gas fumes are present. American Airlines surveyed the market not long ago and found no explosion-proof small vacuum cleaners.

Ignition troubles in the Constellation seem to be pretty well licked. During a recent 30-day period American Overseas had only one Connie return from the end of the runway, and this was blamed on an inexperienced pilot and a new flight engineer rather than on any ignition trouble requiring mechanical inspection.

Wear and tear on ground servicing equipment has become a major concern of many airlines. Ground personnel seem to be particularly rough on aluminum ramps and stands, and many operators feel inclined to make their next investment in the heaviest and most durable equipment they can get. PCA has prepared a special section in their maintenance manual to cover servicing equipment. Eastern tells station personnel to keep their hands off and sends a truck around the system to keep the equipment in good working order. Rather than let local people tinker with their equipment, American Overseas keeps a specialist in Europe to take care of ground servicing equipment. Colonial uses a combined survey and cargo plane (DC-4) to send out new and repaired ground service equipment. Panagra has a travelling specialist who looks after all sorts of non-aircraft maintenance, including buildings and airport facilities.

By the time United Air Lines has the DC-6 in regular service, major stations on the UAL system all will be supplied with new fueling trucks equipped with hydraulic booms to lift operators and hoses into position above the wing-top fuel tanks openings.

Seasonal sidelights on air freight: A standard rail express car will carry 735 crates of strawberries. A DC-4 can handle 847 crates. It costs two and a half cents a box more to ship them by air from Louisiana to northern markets. Air freight outfits haven't yet made much of a dent in the strawberry business, not because of rates but because brokers and growers are strictly rail-minded.

You can't please all of the people all of the time. People who have ridden in the DC-6 say that it hits a new high in passenger comfort, but the people who have to service the DC-6 say that the seats are the worst yet. They apparently have to be completely torn apart and then assembled to accomplish minor repairs and adjustments in the mechanism.

To hear non-scheduled operators talk, one of their biggest problems (other than getting a CAB certificate) is to get good weather information in advance of a long charter flight to an out of the way place.

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## New Equipment

### Reducing Relief Valve

Constant pressure reduction in branch circuits of 3000 p.s.i. systems is offered by a new Vickers reducing relief valve which maintains uniform pressure regardless of pressure variations in the main system.

An integral relief valve provides thermal relief and allows for protection of the branch circuit in the event of failure or malfunctioning of any of its components.

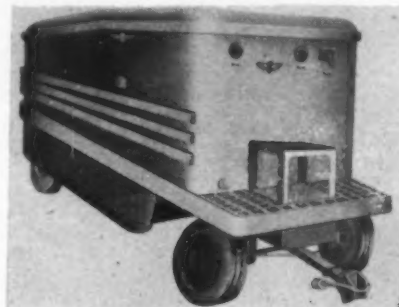
Complete descriptive information is available from Vickers Incorporated, 1400 Oakman Blvd., Detroit 32, Mich.

### Lavatory Service Cart

American Airlines has recently taken delivery on the first of these aircraft lavatory service carts built by Greer Hydraulics, Inc., Brooklyn, N. Y. Other airlines which have ordered the cart are expected to get deliveries as fast as they can be turned out and shipped.

The self contained unit, which can be towed either by tractor or by hand, provides for quick draining and flush-

ing of the lavatory system, and for recharging with the proper amount of



detergent solution. Adapters and quick-disconnect hose line are available for application to different types of aircraft.

### Spring Tension Clamp



steel springs and up to 100 pounds

This spring tension clamp, applicable with either pliers or gun, offers uniformity of pressure and elimination of hand tightening. Available in three standard sizes and in special dimensions, it may be adjusted to secure up to 70 pounds pressure with regular

with special springs. Developed by Aircraft Tools, Inc., 2306 E. 38th St., Los Angeles 11, Calif.

### Overhead Fire Protection

Instantaneous application of foam on inflammable installations of a fixed nature is possible with this new overhead spray deflector. Developed by National Foam System, Inc., Packard Bldg., Philadelphia 2, Pa., the installation can be set up to lay a foam blanket over areas ranging from 47 to 190 feet depending on which of



three available deflectors is used.

Foam may be supplied either from a fixed independent unit or through permanent piping with hose connections hooked up with a special foam truck. Complete equipment consists of a brass foam maker, steel discharge tube and brass dispersion head.

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Sikorsky: S-43s

### ENGINES AVAILABLE

Pratt & Whitney: R-2800s, R-2000s, R-1830s, R-1340 and R-985 all series.

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**FOR SALE:** Airport and Farm—Zieger Field, Warrenton, Va. Operating as commercial airport for past 13 years. Box No. 555, American Aviation, 1317 F St., N. W., Washington 4, D. C.

### Alaska Air Manual Available

A new Alaskan-Aleutian instrument flight manual, with revision service, has been made available to private and commercial aviation interests by Jeppesen and Co., of Denver, Colo., publishers of "Airway Manual." This marks the first time complete instrument flying data on Alaskan and Aleu-

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tian airfields has been available to the public since military security restrictions were imposed in the early days of the war.

The new manual, containing information as to airways, radio facilities, airports, terrain, etc., is indexed for ready reference and will be kept up to date through distribution of new and revised charts as changes occur.

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### Improved Navigation Receiver Ready for Early Production

A greatly improved navigation receiver, known as the VHF omni-direction range system, is ready to enter the production stage and will be ready for use by the airlines this fall.

G. A. O'Reilly, general manager, Aeronautical Radio, Inc., said the organization, at the direction of its member airlines, issued specifications for the improved navigation receiver some months ago. He explained that the principle of operation might be compared to a lighthouse with a rotating beam of radio energy instead of light.

The omni-directional range radiates a VHF signal capable of indicating to the pilot his magnetic bearing to the station from his aircraft at all times and regardless of his relation to that station. O'Reilly said the new system is fully integrated with the instrument landing system, and that the CAA program of installation of 500 omni-range stations is underway and will provide navigation facilities necessary to go with the improved navigation receiver.

### Certificates for Flight Engineers

Part 61 of the Civil Air Regulations has been amended to provide that, effective Sept. 15, 1947, each flight engineer shall hold a valid flight engineer certificate. A six-month interval was allowed to give interested flight engineers ample opportunity to accomplish the flight engineer examinations necessary for the issuance of a flight engineer certificate.

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